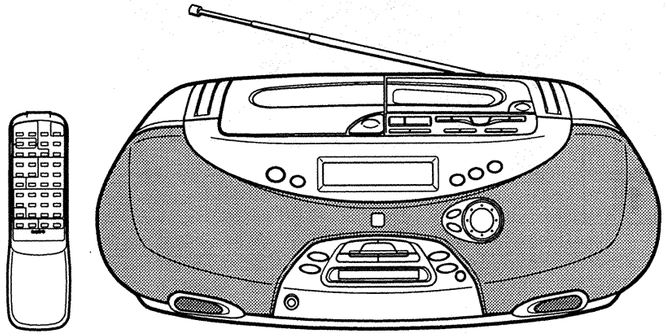
FILE NO.

Service Manual

Portable MD System

MDC-3100F (XE)
(UK)



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PRODUCT CODE No.
142 658 03 (XE)
142 658 04 (UK)

REFERENCE No. SM580908

SPECIFICATIONS

CD player section
Sampling frequency ..... 44.1 kHz
Pick-up ..... Optical 3-beam semiconductor laser
Wow / flutter ..... Below measurable limits

MD recorder section
Sampling frequency ..... 44.1 kHz
Wow / flutter ..... Below measurable limits
Recording system ..... Magnetic modulation over write

Cassette deck section
Track system ..... 4-track, 2-channel stereo
Frequency response ..... 40 Hz - 15 kHz (CrO2 tape)
40 Hz - 14 kHz (Normal tape)
Fast forward / rewind time .. Approx. 110 sec. (C-60)

Radio section
Reception frequency .... FM : 87.5 - 108.0 MHz (0.05 MHz steps)
76.0 - 90 MHz (0.1 MHz steps)
AM : 522 - 1710 kHz (9 kHZ steps)
520 - 1710 kHz (10 kHz steps)

General
Output power ..... 7.5 W x 2 (10 % T.H.D)
Inputs
MIXING MIC ..... 3 mV
LINE IN ..... 500 mV (HIGH), 2 V (LOW) / 47k ohm
Output ..... PHONES : 32 ohms
Power requirements ..... AC 110/120/230 V, 50 Hz
Power consumption ..... 49 W
Dimensions (Approx.) .. 486 (W) x 166 (H) x 291 (D) mm
Weight (Approx.) ..... 5.9 kg

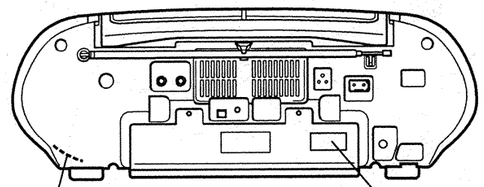
Specifications subject to change without notice.

LASER BEAM SAFETY PRECAUTION

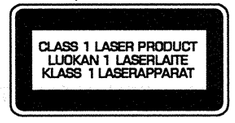
- Pick-up that emits a laser beam is used in this CD player section.

CAUTION :
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

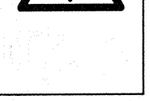
LASER OUTPUT ..... 0.6 mW Max. (CW)
WAVELENGTH ..... 790 nm



(XE, UK)



CAUTION – INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL – USYNLIG LASER STRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION, UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARNING – OSYNLIG LASER STRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRR ÄR URKOPPLAD. STRÅLEN ÄR FARLIG.
VORSICHT – UNSICHTBARE LASERSTRAHLUNG TRITT AUS, WENN DECKEL GEÖFFNET UND WENN SICHERHEITSVERRIEGELUNG ÜBERBRÜCKT IST. NICHT, DEM STRAHL AUSSETZEN.
VARO! Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso äteeseen.

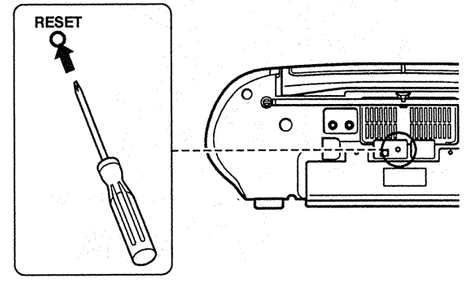


(XE ONLY)

WHAT TO DO IF

- If the operation of the unit or display is not normal, or you wish to clear the contents of the memory.

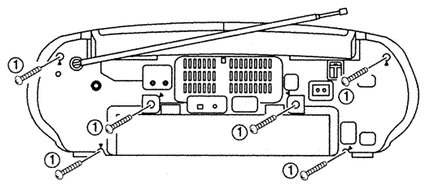
1. Disconnect the power cord's plug from the electrical outlet.
2. Press the RESET button for at least 5 seconds.
3. Connect the power cord.
4. Press the STANDBY button to turn the power on.



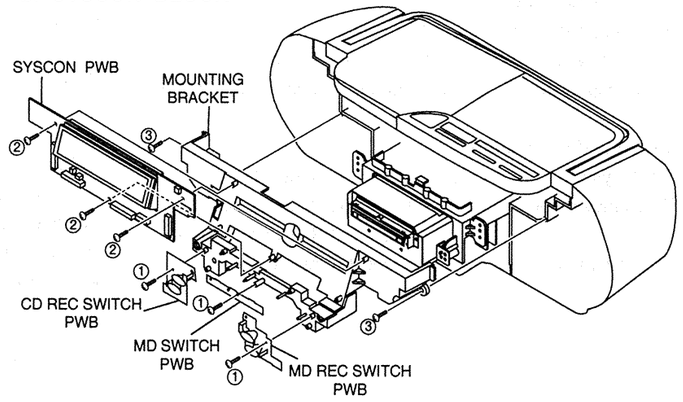
REMOVAL AND INSTALLATION

- Disconnect the power cord's plug from the electrical outlet.
- All wiring should be returned to original position after work is completed.
- First have ready may the new FIXERS (614 129 4971) for replacement.
- Arrange the lead wires so that they are not near the heat sink.

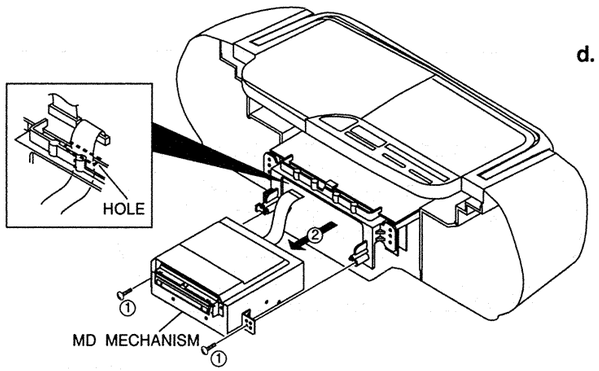
a. CABINET



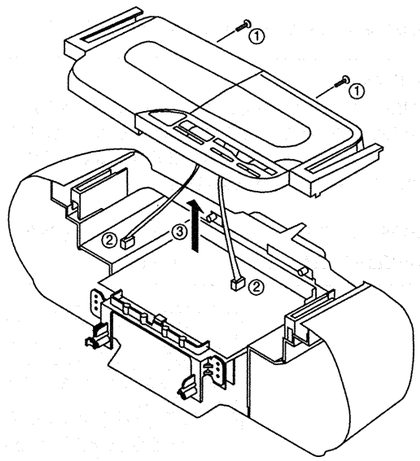
b. SYSCON BLOCK



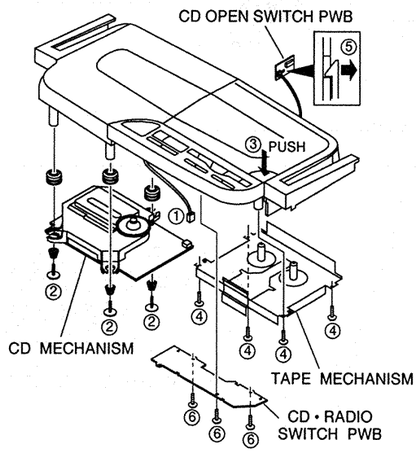
c. MD BLOCK



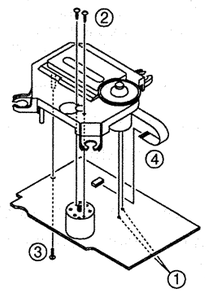
d. TOP PANEL



e. CD MECHANISM & TAPE MECHANISM

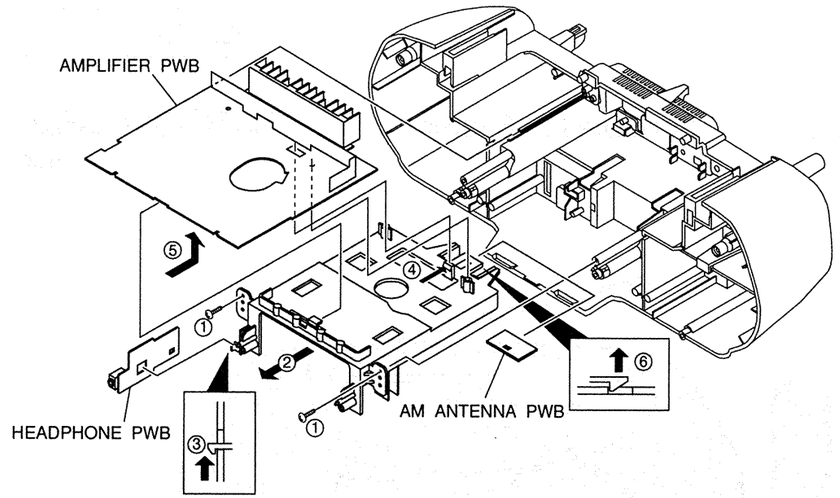


f. CD PWB

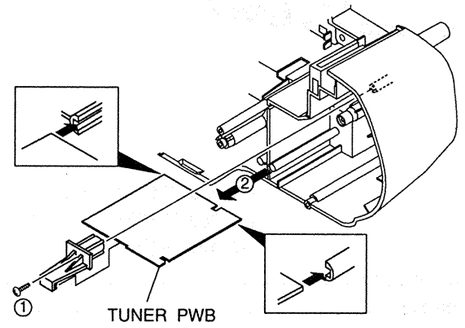


REMOVAL AND INSTALLATION

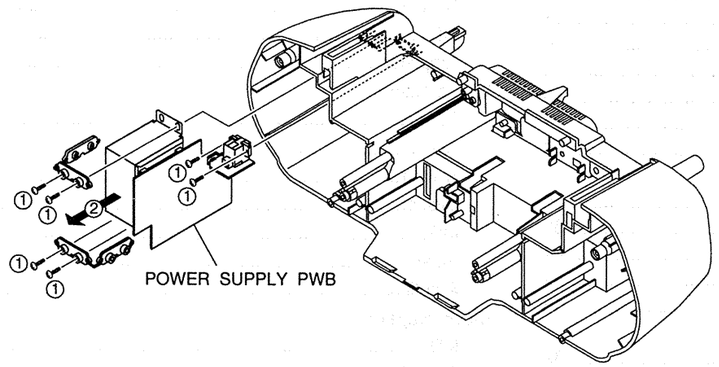
g. AMPLIFIER PWB



h. TUNER PWB



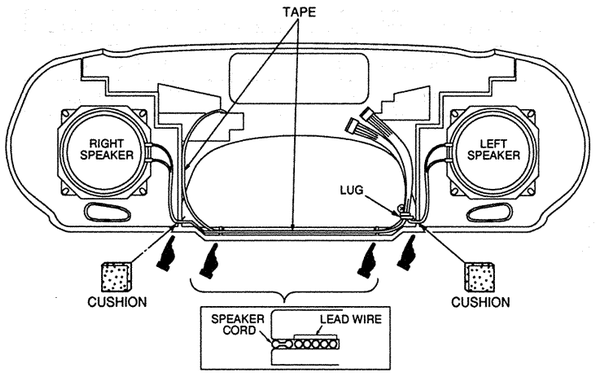
i. POWER SUPPLY PWB



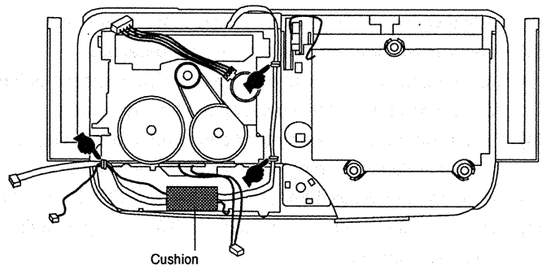
REMOVAL AND INSTALLATION

j. WIRING LAYOUT

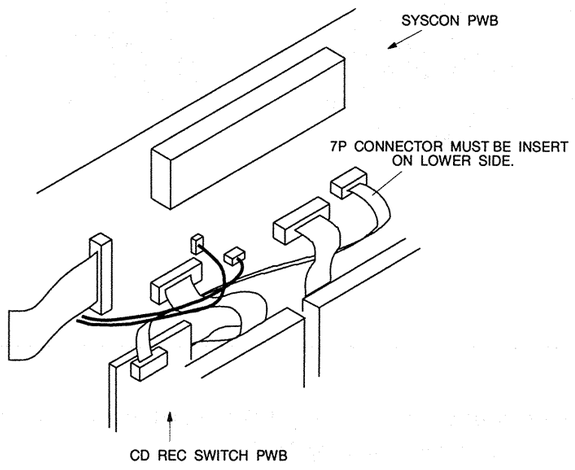
• **FRONT PANEL**

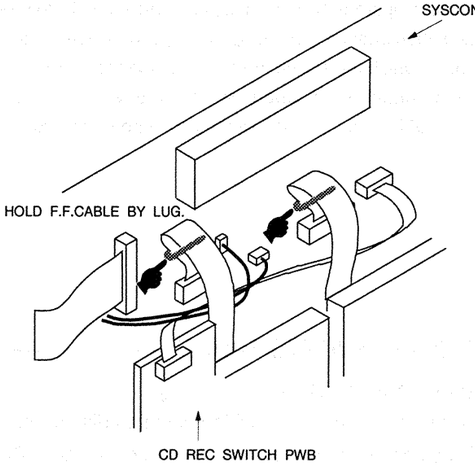


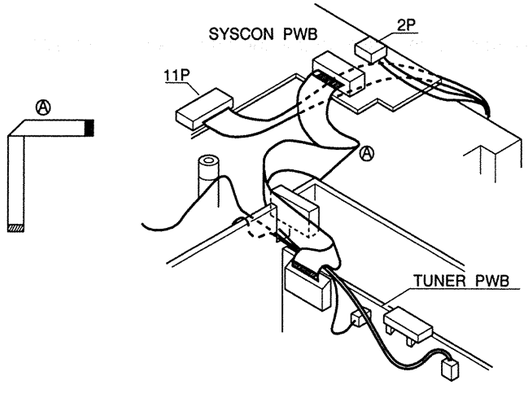
• **TOP PANEL**



• **SYSCON PWB**







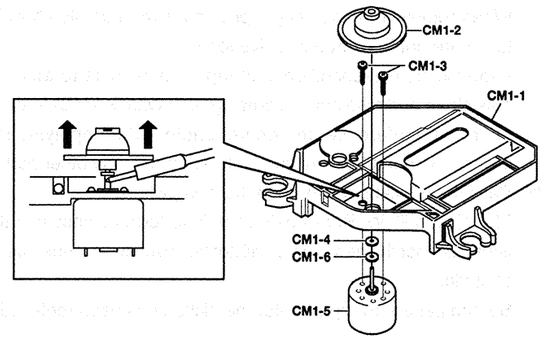
REPLACEMENT OF CD MECHANISM

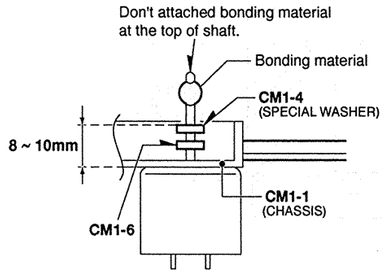
- Note that the mechanism of the CD player section is very delicate.
- It is very important that the spindle motor (which rotates the disc), and the sled motor (which cases the disc signals to be tracked), as well as the gear and other components, operate smoothly, without eccentricity.
- When handling the pickup, take care not to exert excessive force, and particular care should be taken not to touch the lens or the drive circuit's P. W. Board pattern.

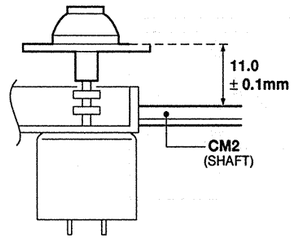
a. REPLACEMENT OF THE SPINDLE MOTOR

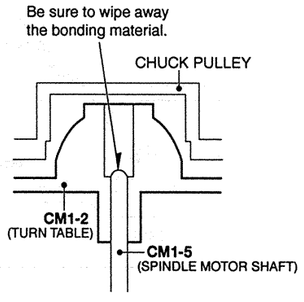
- First, prepare the new turntable(CM1-2) and new special washer(CM1-4) for replacement. The removed turntable will be deformed by the heat of the soldering iron, and cannot be reused.
- Prepare dial type calipers.

(1) The attached bonding material can be dissolved by using a 60W soldering iron to heat the shaft at the under part of the turntable for about one minute.
(2) The turntable can then be removed from the shaft by very carefully applying force upward at the center of the lower surface of the turntable.
(3) Remove the two screws(CM1-3) and remove the spindle motor(CM1-5).
(4) Attach the special washer to the spindle motor.
(5) Apply a small amount of a mixture of the "Three Bond 2001 and 2015F" bonding materials to the motor's shaft.
(6) Install the turntable as shown in the figure. Secure the turntable by pressing gently. Be sure to wipe away (by using a piece of cloth, or similar material) any bonding material coming out of the hole.



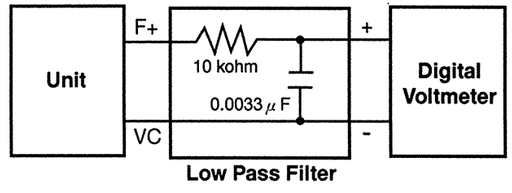






b. CONFIRM OF INCLINATION FOR THE TURNTABLE

(1) Connect the digital voltmeter as shown in the figure.
(2) Set the test disc (TEDS 18 = SONY or etc.), press the PLAY button. (Playback for the most inner music)
(3) At this time, record voltage value to indicate at the digital voltmeter.
(4) Access the most outer music, press the PLAY button. (Playback for the most outer music)
(5) Again at this time, record voltage value to indicate at the digital voltmeter.
(6) For reference at the recorded voltage of the most inner music, confirm at ± 300 mV less than for recorded voltage of the most outer music.



REPLACEMENT OF CD MECHANISM

c. REPLACEMENT AND LUBRICATION OF THE PICKUP

- Before replacement of the pickup, be sure to carefully read the section regarding the pickup when the unit is moved or transported.

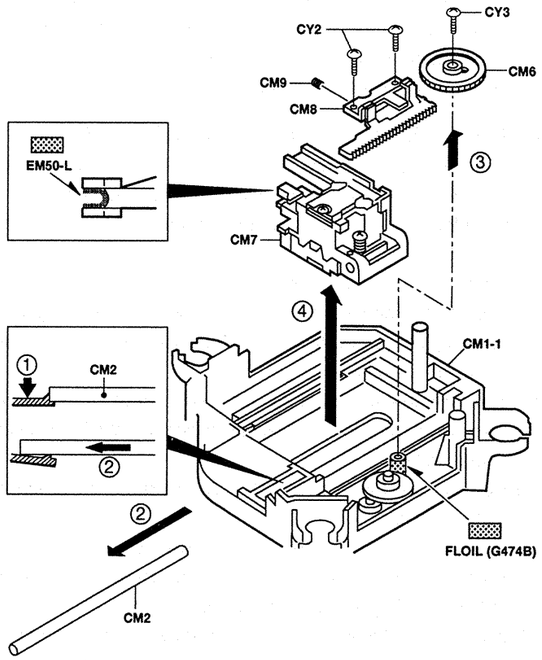
(1) Remove the a pickup rail(CM2) with care fixing the latch with way driver from bottom part of chassis(CM1-1).

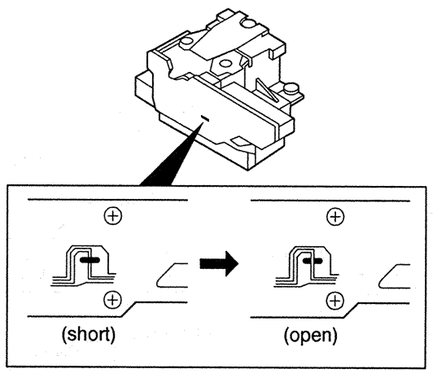
(2) The pickup(CM7) can now be remove once the a pickup rail have been taken out.

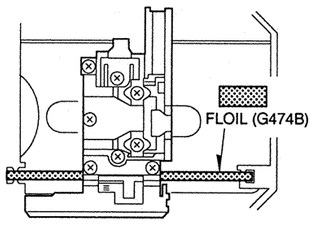
- When removing or inserting a pickup rail from or into chassis, take care not to exert excessive force.
- If the pickup is reconditioned of replaced, be sure to wipe the rails clean and also apply a coating of FLOIL(G-474B) to there entire circumference and entire length. When applying the grease, do not allow any grease to adhere to any other parts.

(3) Pass the a pickup rail through the new pickup.

- The pickup P. W. Board pattern is "shorted", as shown in the figure, so that the new pickup will not be susceptible to the effects of static.
- Set the pattern to "open" after the pickup has been replaced.

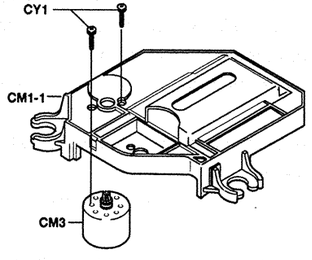






d. REPLACEMENT OF THE SLED MOTOR

(1) Remove the two screws(CY1) and remove the sled motor(CM3).



REPLACEMENT OF CD MECHANISM

e. CHECKING THE ACTION OF THE CD MECHANISM

(1) Disconnect the socket (for the sled motor power supply) from the P. W. Board.

(2) Apply a voltage of DC 2.0V to the sled motor's terminal.

(3) Measure the current during sled motor operation.

- The direction of movement of the pickup (outer groove or inner groove) can changed by changing the battery polarity.

(4) The current during sled motor action varies according to the positional relationshipping of gears(CM5 and CM6).

(5) If the current exceeds 40mA, remove the gears(CM5 and CM6).

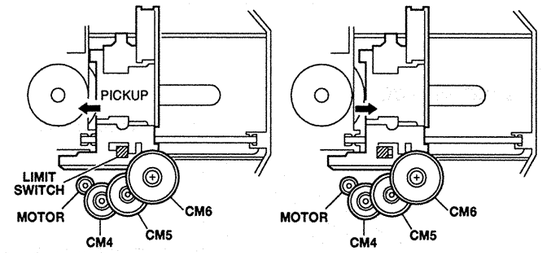
(6) Apply a small amount of a FLOIL(G-474B) bonding materials to the chassis shafts.

Direction of pickup movement	Sled motor current
Outer groove	40 mA or less
inner groove	40 mA or less

f. RESETTING THE PICKUP TO THE HOME POSITION

(1) The limit switch is switched ON by the projection of this rack gear secured to the returned pickup, after which the sled motor continues to operate (by the circuit) for approximately 30 msec. : there is then again a reverse operation, and movement to the position at which the switch the switch is switched OFF.

(2) Rotation continues for about 30 msec. after the switch is switched OFF, and then the pickup stop at home position.



CD PICK-UP MAINTENANCE

About pick-up (Optical lens) Cleaning

Clean the lens with the specified cleaning disc or moisten a cotton swab with isopropyl alcohol and cleaning paper.

Specified cleaning disc : LC-1 (Part code : 645 026 1961 ..... manufactured by SANYO.)

Regarding procedure of cleaning with moisten cotton swab, please refer to the attached as follows.

1. Cotton swab wrapped with Cleaning paper
2. Add the isopropyl alcohol
3. Gently move the tip of cotton swab just like a draw a whirlpool from inside to outside on the surface of lens.

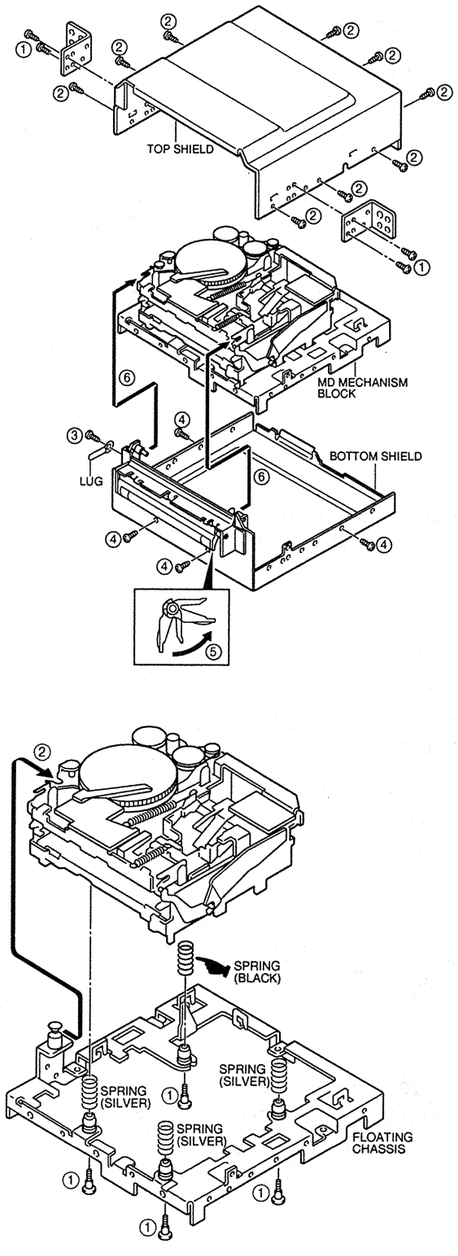
REPLACEMENT OF MD MECHANISM

Preparations

- Before starting, remove any MD that is loaded in the unit. Because MD is very sensitive, treat it carefully.
- Electronic circuit components, such as the Pickup and the PWBs (especially the laser diode and the LSIs and ICs), are very sensitive and vulnerable to damage from static electricity, and must be handled with the utmost care.
  - All apparatuses, test equipment, and tools must be grounded. In order to prevent AC leakage from a soldering iron, the metal portion of the soldering iron must be grounded.
  - A conductive sheet must be spread over the workbench and grounded.
- The Motor and the Pickup, etc. are precision components. So don't give a shock to these and damage it with a tool.
- Never use excessive force when handling the Pickup, and be especially careful not to touch the lenses, drive mechanisms, or drive circuitries.

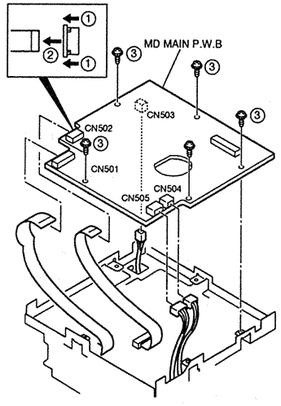
a. Disassemble the MD mechanism Block

(1) Remove the 4 MD unit joint screws. (①)
(2) Remove the 9 the top shield screws. (②)
(3) Remove the 1 fixing lug screw. (③)
(4) Remove the 4 bottom shield screws. (④)
(5) Remove the shutter spring as figure. (⑤)
(6) Remove the MD mechanism block. (⑥)



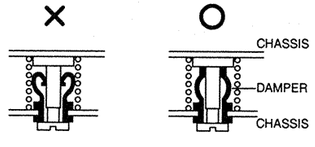
b. Disassemble the MD main P.W.B

(1) Gently remove the 5 connectors (CN501~505) at MD Main P.W.B and MD mechanism. (①, ②)
(2) Remove the 4 MD main P.W.B screws. (③)
(3) Able to separate MD Main P.W.B and MD mechanism.



c. Disassembly the Floating Chassis

(1) Remove the 4 MD mechanism screws. (①)
(2) Separate the MD mechanism. (②)
- When installing the MD mechanism, be very careful to place the black and silver springs in their correct positions.
- Mount the dumper as follows.



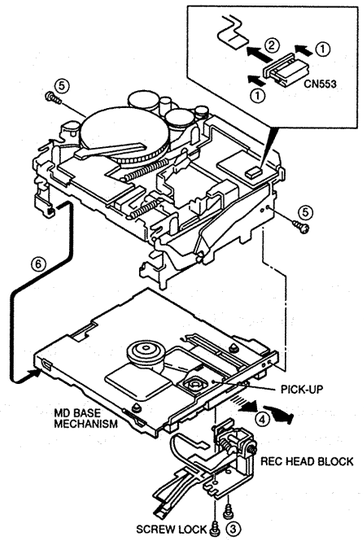
REPLACEMENT OF MD MECHANISM

d. Disassemble the REC head and Base mechanism

(1) Remove the connector from REC head of Head Relay P.W.B. (①, ②)
- Never apply excessive force to the Flexible Film Cable that connects the REC head to the Head Relay board. Doing so could damage the Flexible Film Cable.

(2) Remove the 2 REC head block screws. (③)
- When attaching the REC Head block, first move the MD Pickup in the direction indicated by the arrow in the diagram. (④)

(3) Remove the 2 screws at fixing loading mechanism and base mechanism. (⑤)
(4) Remove the base mechanism as figure.(⑥)
(5) Separate the loading mechanism and base mechanism.

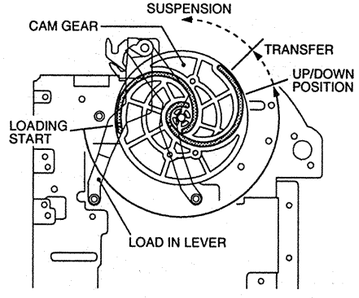


e. Action of MD loading mechanism section

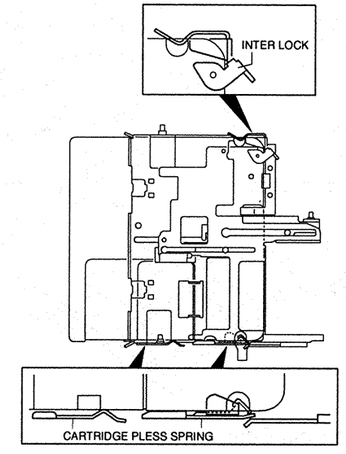
Slot the MD (Mini Disc) cartridge

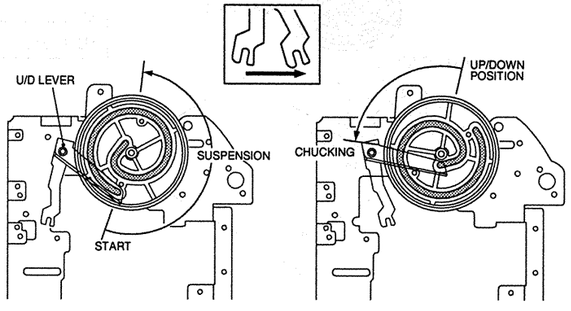
- The MD Loading Door can be opened from the front.

(1) When an MD cartridge is loaded manually, the Loading Slide (LM36) located on the left front edge of the cartridge is pressed, releasing the Loading Slide Interlock . The cartridge is then held in place by the Cartridge Press Spring (LM35, LM37).
(2) If the Loading Slide (LM36) is pushed back further, the Switch Lever (LM62) is tripped, turning on S5502 on the Switch board (101), which causes the Loading Motor (LM48) to begin to turn.
(3) The Loading Motor turns the Cam Gear (LM64). This moves the Loading Lever (LM51) in the Under Cam block, which moves the Loading Slide (LM36) backwards.

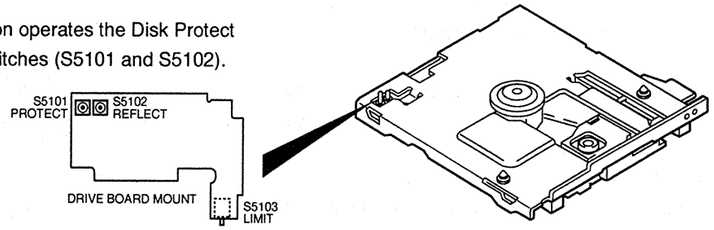


(4) The Up/Down Lever (LM68) in the Upper Cam block then moves, moving the Up/Down Slide (LM60) backwards.
(5) As the Up/Down Slide moves, the Cartridge Holder (LM32) descends, executing the disk chucking operation.
(6) The Up/Down Lever (Head Up/Down) in the Cartridge Holder and the Cam Gear (Head Up/Down) in the Up/Down Slide move together, lowering the head.
(7) The descent of the Loading Slide (LM36) causes Door Open/ Close Levers A and B to operate, closing the door.



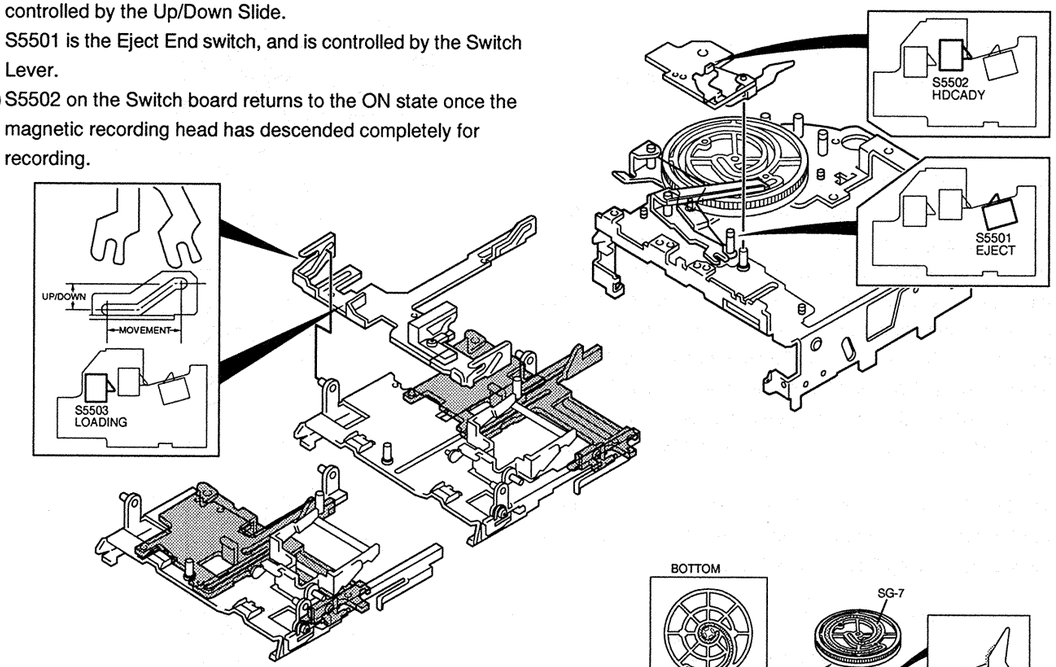


(8) The disk (MD) chucking operation operates the Disk Protect and Disk Media (REFLECT) switches (S5101 and S5102).



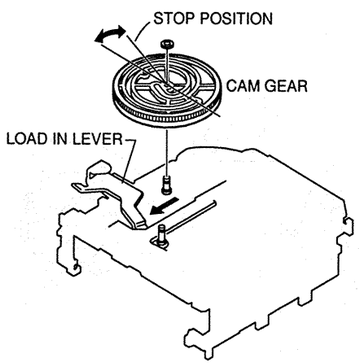
(9) S5503 on the Switch board is the Loading End switch, and is controlled by the Up/Down Slide.
S5501 is the Eject End switch, and is controlled by the Switch Lever.

(10) S5502 on the Switch board returns to the ON state once the magnetic recording head has descended completely for recording.



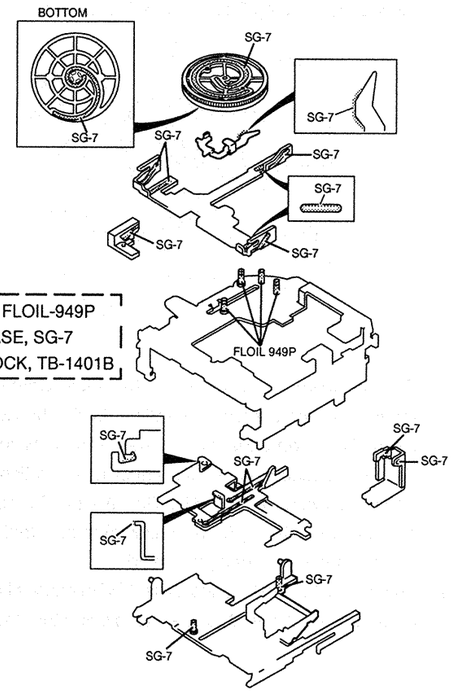
f. Installing the Cam Gear

(1) It puts Loading Lever (LM51) to orientation of arrow.
(2) Mount the Cam Gear (LM64) as figure.



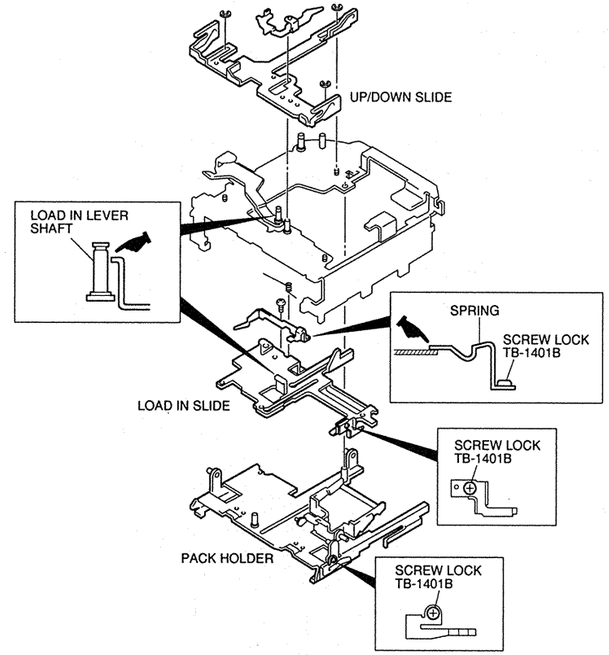
Lubrication

FLOIL 949P	FLOIL OIL, FLOIL-949P
SG-7	SAN GREASE, SG-7
TB-1401B	SCREW LOCK, TB-1401B



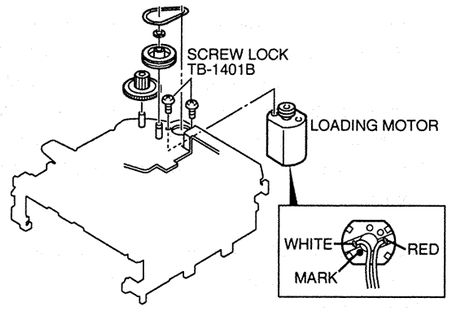
g. Installing the Loading Mechanism parts

After attached, apply screw lock as shown in the figure.



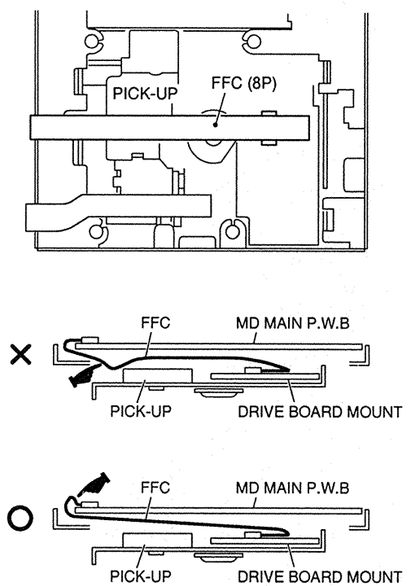
h. Installing the Loading Motor

After attached, apply screw lock as shown in the figure.



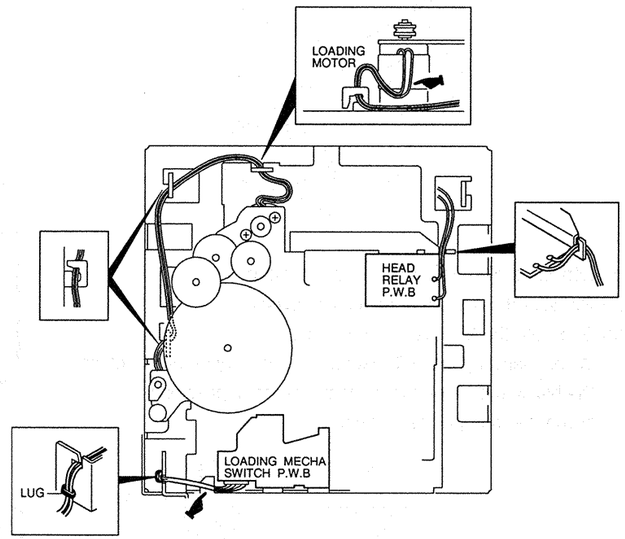
i. Installing the Flexible Film Cable (FFC)

Attach the FFC as shown in the diagram in order to prevent sound skip.



j. Wiring Layout

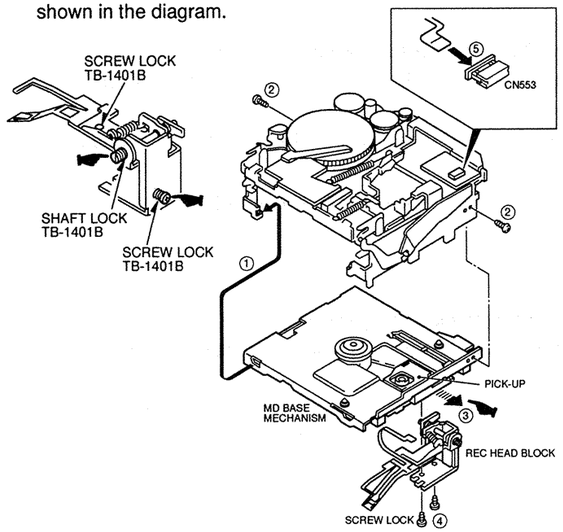
Arrange the lead wire as shown in the figure.



REPLACEMENT OF MD MECHANISM

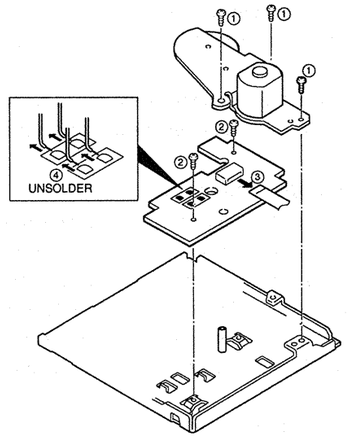
k. Installing the REC Head

- Be very careful not to scratch the magnetic recording head while attach it.
- After attach the magnetic recording head, apply screw lock as shown in the diagram.



l. Replacing the MD Sled mounting block and Mechanism switch

(1) Remove the 3 Sled mounting screws. (①)
(2) Remove the 2 Mechanism switch P.W.B screws. (②)
(3) Remove the Flexible Film P.W.B form Mechanism switch P.W.B. (③)
(4) Remove the 4 leads with soldering. (④)

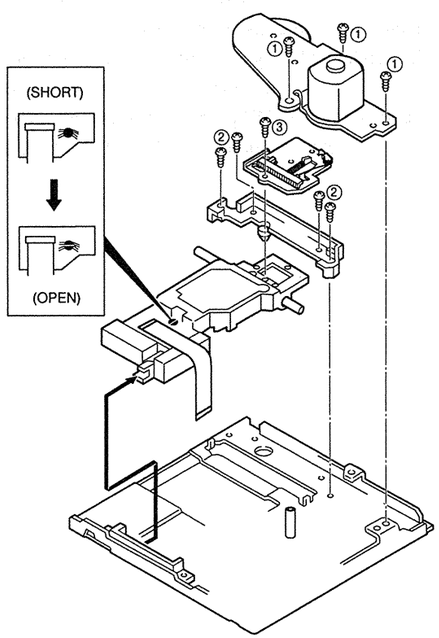


m. Replacing the MD pick-up and Pack mounting block

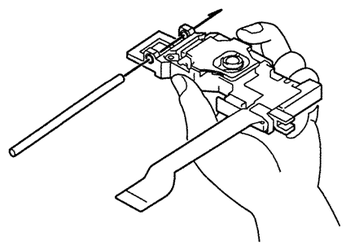
CAUTION:
- Do not disassemble or adjust of pick-up, it is dangerous for them.
- Do not look directly at the laser beam coming from the pick-up or allow it to against your fingers, skin, etc.

- It short-circuits a pattern of pick-up to keep pick-up than static electricity as shown in chart.
- Do not bring a magnet or other magnetized object near to it.
- If the center of the lens is dirty, carefully clean it using cotton swab moistened with isopropylalcohol. Also, be careful not to bend the lens spring when cleaning.

(1) Remove the 3 Sled mounting assembly screws. (①)
(2) Remove the 4 Shaft mounting screws. (②)
(3) Remove the Pack mounting assembly screw. (③)
(4) Can take off the MD pick-up and shaft.
(5) After replacing the MD pickup with a new one and connecting the Flexible Film Cable (FFC) to the connector, open the pick-up pattern (on the FFC).
(6) After the MD pick-up has been replaced, the MD block must be adjusted.



n. Having the MD pick-up



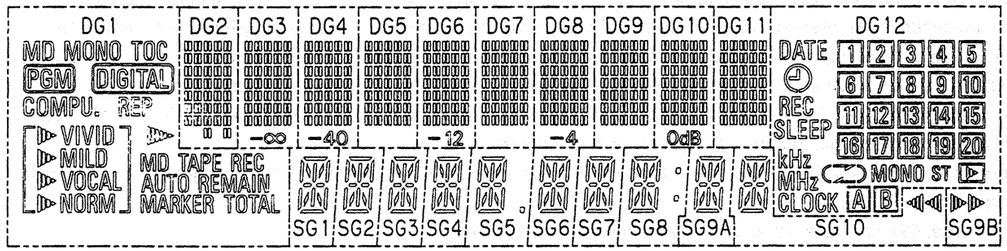
SERVICE MODE

a. Service mode entry

To establish any of the service modes, press the ENT/YES button and REV MODE button on the unit together to establish first the service mode entry status. Then press a button corresponding to the mode on the unit to establish the service mode desired. The service mode entry status is released when more than one second is allowed to elapse after the ENT/YES button and REV MODE button have been pressed together (and not released). (A service mode is established only when the next button is pressed within one second after the two buttons are pressed.)

b. Button connection check

- This mode is established by pressing the SOUND/BASS button in the service mode entry status.
- When the mode is established, the power is automatically turned on if it was off.
- When the mode is established, all the FL display segments and LEDs light.
- Each time one of the buttons on the unit (or remote control) is pressed in this mode, the FL display segment and LED go off if they were on or, conversely, they come on if they were off.
- Press the STANDBY button to cancel this mode.



Button	Display
P.SCAN	DG2
RADIO/BAND	DG3
CD SKIP/SERCH ▶▶I	DG4
CD SKIP/SERCH I◀◀	DG5
CD STOP/CLEAR ■	DG6
CD PLAY/PAUSE ▶/II	DG7
TAPE AMSS ◀◀	DG8
TAPE REV PLAY ◀	DG9
TAPE STOP ■	DG10
TAPE FWD PLAY ▶	DG11
CD▶TAPE SYNCHRO REC (NORM)	DG8 (-4)
CD▶MD DIGITAL REC (SYNCHRO)	SG1
MD ■	SG2
MD ▶▶I	SG3
MD ▶/II	SG4
MD I◀◀	SG5
MD ●/II	SG6
SOUND / BASS	SG7
MD DELETE (LETTER)	SG8

Button	Display
MD LETTER	SG9A, SEG9B
MD EDIT	DG10 ◀◀
MD EJECT	DG10 (0dB)
CD▶MD DIGITAL REC (AUTO)	DG1 MD, PGM, DIGITAL, VIVID, MILD VOCAL, ▶ NORM, ▶ (Play)
TAPE REC / REC PAUSE	DG1 MONO, TOC
TAPE REV MODE	DG1 ▶ NORM, ▶ MILD, ▶ VOCAL
SOUND / LETTER, CCL / NO	DG1 COMP, REP, MD, TAPE, REC AUTO, REMAIN, MARKER, TOTAL
TAPE AMSS ▶▶	DG12 (1 - 20)
CD▶TAPE SYNCHRO REC (HIGH)	DG12 DATE, ◴, REC, ▶, (⁀)
SOUND / LETTER, ENT / YES	DG12 SLEEP, kHz, MHz, ⏎, MONO, ST, A, B
CD LID OPEN	LED NORM
CD LID CLOSE	LED HIGH
JOG DIAL	LED SYNCHRO / AUTO

c. Timer debugging mode

- This mode is established by pressing the REV MODE button in the service mode entry status.
- When the TUNING + button on the unit is pressed in this mode, the present time is advanced by 1 minutes, and 55 seconds are set for the second display. When the button is held down, the time is advanced continuously. (See Fig. 1)
- The mode is exited and the normal mode is restored by pressing the REV MODE button.

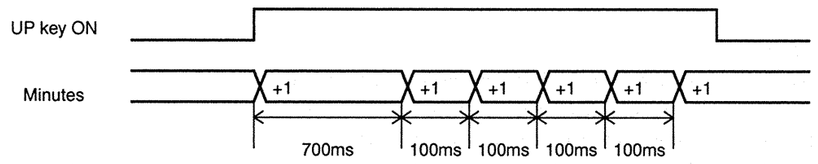


Fig. 1 Continuous key pressing timing

d. CD adjustment mode

- This mode is established by pressing the CD SKIP/SEARCH ▶▶I button in the service mode entry status.
- When the mode is established, CD is selected as the function, and the power is automatically turned on if it was off.
- In this mode, the tracking balance adjustment mode (tracking off) is automatically established after the tray has finished closing. When the CD PLAY button is now pressed, the tracking servo is turned on, and play is performed then and there. (Even if the read-in area is involved, TN0=00 and E.TIME are displayed, and play is performed.) The pick-up's initial position (limit switch position) can be ascertained from the display which appears when play is commenced.
- When the CD→MD SYNCHRO button is pressed during play in this mode, the tracking balance adjustment mode is changed to the tracking servo on play mode.
- In this mode, CD play does not stop even with the servo error status.
- The CD circuit power is not turned off when CD play is stopped in this mode. (For the focus offset adjustment)
- If the HIGH button is pressed during play in this mode, the standard speed is switched to double speed or vice versa.
- This mode is released when the power is turned off.

e. CD repair mode

- This mode is established by pressing the CD SKIP/SEARCH I◀◀ button in the service mode entry status.
- When the mode is established, CD is selected as the function, and the power is automatically turned on if it was off.
- In this mode, a display indicating a CD operation which is at variance from the normal display appears in the FL 7-segment (SG7) area while the CD function is selected.
- When a CD error occurs in this mode, the calendar numbers light as shown in Table 1. After an error has occurred, the CD operation display and calendar area display remain fixed. The fixed displays are released by pressing the STOP button in the stop status.
- If the HIGH button is pressed during play in this mode, the standard speed is switched to double speed or vice versa.
- This mode is released when the power is turned off.

No.	CD Error
1	Proper focusing is not possible during the focus search mode.
2	Focus was lost while the servo was on (during playback, etc.).
3	GFS O.K. is not achieved when a disc starts playing.
4	GFS N.G. occurred while the servo was on (during playback, etc.).
6	TOC can not be read.
7	The tray opens improperly.
8	The tray closes improperly.

Table 1 CD error status display

f. Deck inspection mode

- This mode is established by pressing the TAPE STOP button in the service mode entry status.
- When the mode is established, tape is selected as the function, and the power is automatically turned on if it was off.
- In this mode, the LINE function is selected when the REC button is pressed. Alternatively, the CD function is selected when the CD OPEN button is pressed.
- In this mode, the recording operation is commenced directly during CD double-speed dubbing (without rewinding, etc.).
- When CD dubbing or manual REC is stopped in this mode, the tape is automatically rewound to the recording start position where tape play then starts.
- Cue and review operations are possible using the unit's FF and REW buttons in this mode. (AMSS operations are no longer performed.)
- In this mode, the volume up/down speed is set to 8 times normal speed (while the button is continuously pressed).
- This mode is released when the power is turned off.

g. Tuner inspection mode

- This mode is established by pressing the RADIO/BAND button in the service mode entry status.
- When the mode is established, tuner is selected as the function, and the power is automatically turned on if it was off. FM is selected as the band, and the lowest frequency is tuned in.
- In this mode, the volume up/down speed is set to 8 times normal speed (while the button is continuously pressed).
- In this mode, the volume level is automatically initialized to -10 dB in the FM band and 0 dB in the AM band.
- This mode is released when the power is turned off.

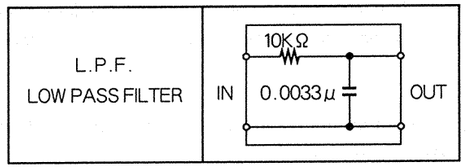
h. Version display mode

- This mode is established by pressing the TAPE REC button in the service mode entry status when MD was selected as the function and the power was turned on.
- The version of the system control's program is displayed for several seconds.
  Example of display: S Y 9 8 0 2 0 9 a
- The version of the MD program is displayed when push TAPE REC button once again.
  Example of display: M D 9 8 0 1 2 9 a

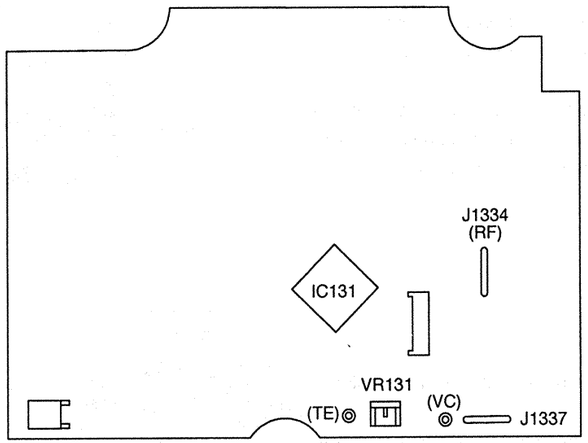
CD ADJUSTMENTS

a. Equipment to be Prepared for Adjustment

1. Test disc : YEDS18 (Sony)
2. Oscilloscope : SS5711, etc. (10 MHz or higher, dual-channel system)
   (Memory scope) : DSS6521, etc. (10MHz or higher)
3. Screwdriver for adjustment : Non-metallic
4. Filter : See Table below. (P.W. Board Ass'y)



b. Parts Location



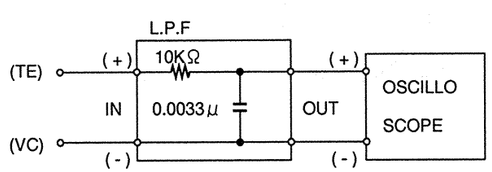
c. Adjustment Items

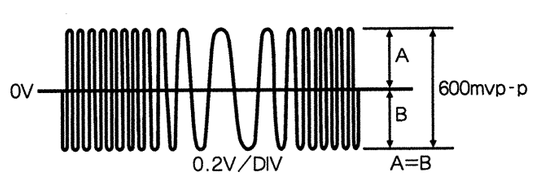
- Adjustments to the CD block are performed in the service mode.
- Service mode settings (CD adjustment mode) should be made as follows.

1. Press the ENT/YES button and the REV MODE button at the same time to activate service mode entry status.
2. Within one second of pressing the buttons, press the SKIP/SEARCH ►►I button. This completes the adjustment mode settings.
3. Pressing the STANDBY button a second time cancels the service mode, switches to the normal operating mode, and powers down the unit.

(1) Tracking Balance Adjustment

1. Activate the service mode.
2. Connect the test points (IC131 pin42 and pin48[J1337]) to an oscilloscope via a low pass filter (L.P.F.).
3. Load the test disc.
4. Press the CD PLAY button. (The tracking servo is disengaged, making it possible to adjust the tracking balance.)
5. Make 0 V the pivot point of the waveform and adjust VR131 so that the upper and lower portions are symmetrical.
6. Press the STOP button.
7. Cancel the service mode and turn power off.

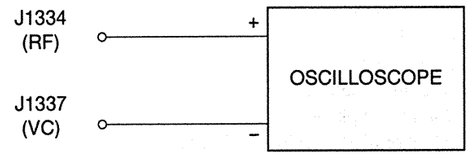


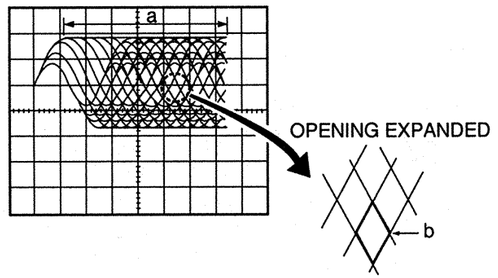


CD ADJUSTMENTS

(2) Eye Pattern Confirmation

1. Connect the test points (RF[J1334] and VC[1337]) to an oscilloscope.
2. Load the test disc.
3. Press the CD PLAY button.
4. Confirm that an eye pattern appears on the oscilloscope. Also confirm that the voltage of the RF waveform at this point is 0.7 V or more.

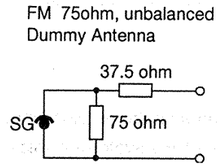




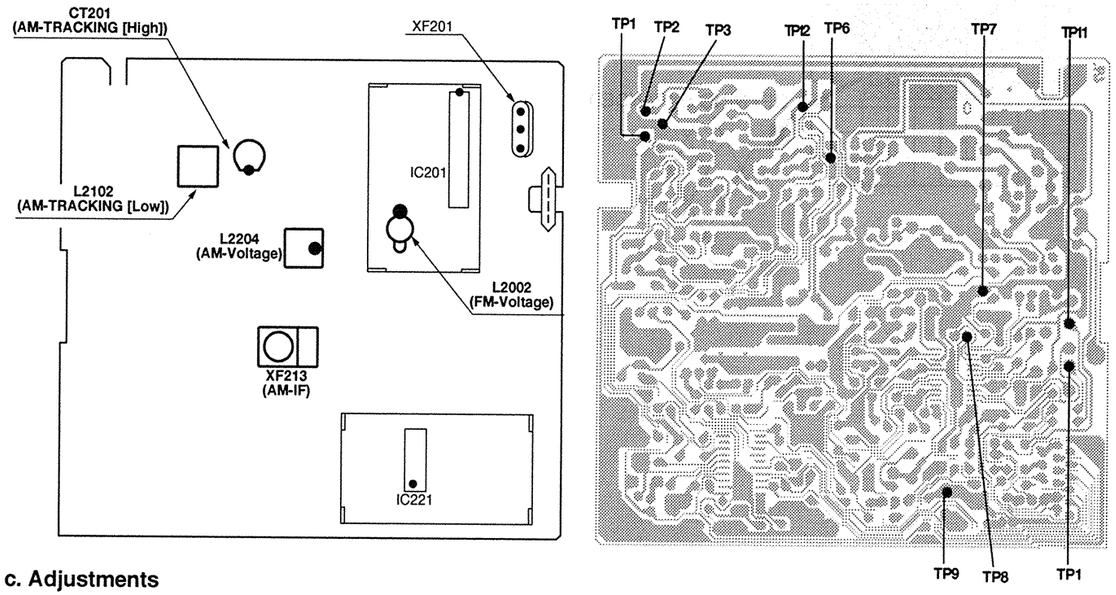
TUNER ADJUSTMENTS

a. Equipment to be Prepared

1. FM SG (digital type)
2. Stereo modulator
3. V.T.V.M
4. Oscilloscope
5. Frequency counter
6. Counter amplifier
7. IHF filter (B.P.F.; 200 - 15,000 Hz)
8. Digital voltmeter



b. Parts location

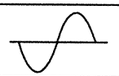


c. Adjustments

1. AM Adjustment Band Switch : AM Antenna : IRE Loop, Modulation frequency : 400 Hz, Modulation : 30 %

Step	Adjusting Circuit	Tuning Frequency	Input Connection		Output Connection		Adjustment	VTVM Oscilloscope or DC voltmeter
			Measurement	Input	Measurement	Output		
1	IF	450 kHz (at 999 kHz)	AM Sweep Generator	Loop Antenna	VTVM Oscilloscope	TP8 (H) TP7 (E)	XF213	
2	Tuning coverage	522 kHz	---	---	Digital Voltmer	TP6 (H) TP12 (E)	L2204	1.0±0.05V
		1710 kHz					---	Confirm 3.8±0.8V
3	Tracking	603 kHz	AM Signal Generator (75dB)	Loop Antenna	VTVM Oscilloscope	TP10 (L), TP11 (R), TP9 (E)	L2102	Maximum
		1404 kHz					CT201	

2. FM Adjustment Band Switch : FM Antenna : 75 ohms unbalanced, Modulation frequency : 1 kHz, Frequency deviation : Mono = ± 22.5 kHz, Stereo = ± 22.5 kHz, Pilot = ± 6.75 kHz

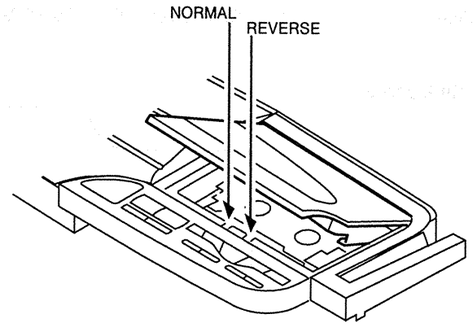
Step	Adjusting Circuit	Tuning Frequency	Input Connection		Output Connection		Adjustment	VTVM Oscilloscope or DC voltmeter
			Measurement	Input	Measurement	Output		
1	IF	10.65 MHz (at 98.0 MHz)	FM Sweep Generator	TP2 (H) TP3 (E)	VTVM Oscilloscope	TP8 (H) TP7 (E)	---	
2	Tuning coverage	87.5 MHz	---	---	Digital Voltmer	TP6 (H) TP12 (E)	---	Confirm 2.3±0.5V
		107.9 MHz					L2002	4.0±0.1V
3	Tracking	90.0 MHz	FM Signal Generator (60dB)	TP1 (H) TP3 (E)	VTVM Oscilloscope	TP10 (L), TP11 (R), TP9 (E)	---	Confirm with being near by effective sensitivity.
		106.0 MHz					---	

TAPE ADJUSTMENTS

a. Adjusting Azimuth

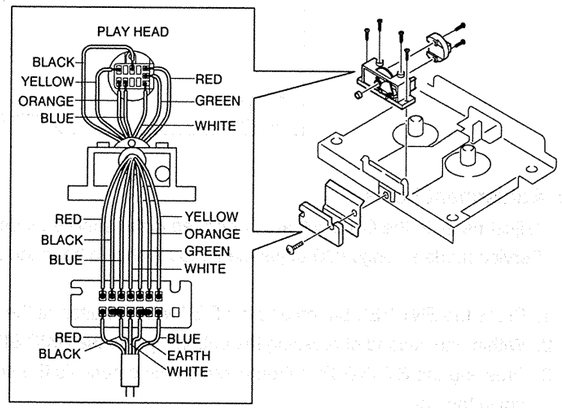
- Be sure to clean the heads before attempting to make any adjustment.
- Be sure both channel's waveform are the same for the phase matching.
- Be sure both channels (1 and 2) are the same level using a dual-channel oscilloscope.
- After completion of the adjustment, apply the threadlock (TB-1401B) to the azimuth adjustment screws to fix them securely.

1. Load an azimuth adjustment test tape (VTT-703 etc. : 10 kHz) in tape deck.
2. Press the PLAY button. (normal playback)
3. Use a flat-tip screwdriver to turn the screw for normal azimuth adjustment so that the left and right outputs are maximized at the same phase during normal playback.
4. Play the tape in the reverse mode.
5. Use a flat-tip screwdriver to turn the screw for reverse azimuth adjustment so that the left and right outputs are maximized at the same phase during reverse playback.



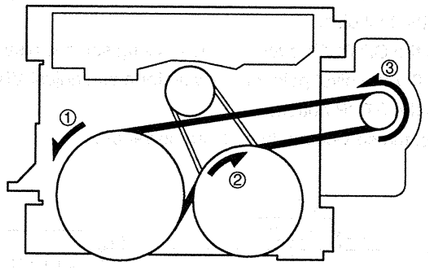
b. Replacing the Heads

- After replacing the heads, demagnetize the heads by using a degausser.
- All wiring should be returned to the original position after work is completed.



c. Replacing the Belt

- Thread the Main belt and the RF belt.
- Rotate the flywheel and check that the belt is turning properly.

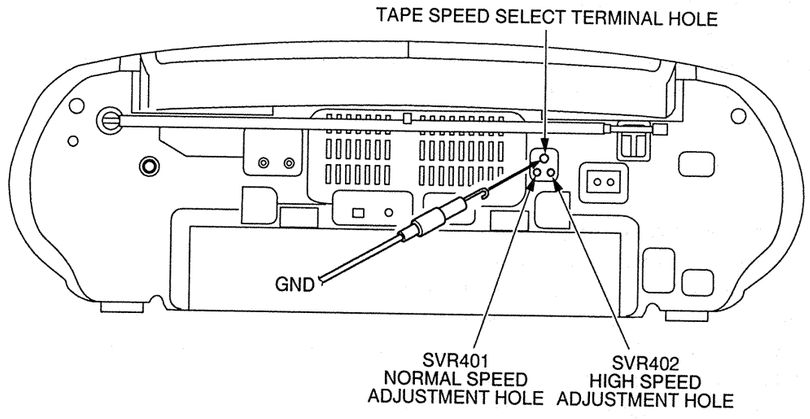


TAPE ADJUSTMENTS

d. Adjusting Tape Speed

- Use a plastic screwdriver for adjustment.
- Be sure to operate the tape mechanism with the tape running at the normal speed instead of the high speed, which may cause the mechanism to malfunction.

1. Insert the wow test tape for checking the high-speed operation (ABEX TCW-211, etc.) into the tape deck. At this time, set the test tape to a FWD ending position.
2. Connect the frequency counter to phones terminal.
3. Press the PLAY button in the FWD mode. (The frequency counter indicates 1500 Hz, for the tape runs at the normal speed at this time.)
4. Set the tape to the high-speed mode. (Connect the tape speed switch terminal to GND, and the tape starts running in the high-speed mode.)
5. Insert the screwdriver to the tape speed adjustment hole for high speed. Make adjustment in such a way that the frequency counter indicates 3000 ± 10 Hz at a FWD ending position.
6. Remove the tape speed switch terminal from the GND, then set the normal speed and press the STOP button.
7. Insert the wow test tape for checking the normal speed operation (TEAC MTT-111N, etc.) in the tape deck. At this time, set the test tape to a FWD ending position.
8. Press the PLAY button in the FWD mode.
9. Insert the screwdriver to the tape speed adjustment hole for normal speed. Make adjustment in such a way that the frequency counter indicates 3000 ± 10 Hz at FWD ending position.



e. Checking the Mechanism Torques

- Clean the head, capstan and pinch roller before making any adjustment.
- Check both the normal and reverse playback conditions of the tape deck.

ITEM	TAKE UP TORQUE	BACK TENSION	TAPE TENSION
CASSETTE FOR MEASUREMENT	PLAY : TW-2111A (FWD) PLAY : TW-2121A (REV) F.FWD/REW : TW-2231	PLAY : TW-2111A (FWD) PLAY : TW-2121A (REV)	DRIVE POWER CASSETTE PLAY : TW-2412 (FWD) PLAY : TW-2422 (REV)
PLAY	30 ~60 gr.cm	2.0 ~5.0 gr.cm	80 gr or more
F.FWD	70 ~140 gr.cm	————	————
REW	70 ~140 gr.cm	————	————

MD ADJUSTMENTS

a. MD unit service mode

- **Preparations to enter the service mode (adjustment)**

(1) Press the POWER button to turn on the power.
(2) Check that "HELLO!" appears in the FL display area.
(3) Press the MD button to select the MD function.
(4) Check that the following appears in the FL display area:

```
NO DISC
MD — — —
```

(5) Establish the service (adjustment) mode by pressing the MD EJECT button within one second after the ENT/YES button and REV MODE buttons have been pressed together.
(6) "T = 25 OK?" appears in the FL display area. This completes the preparations for establishing the service (adjustment) mode.
(7) Disconnect the AC cord to release the service mode.

- **Preparations to enter the service mode (inspection)**

(1) Press the POWER button to turn on the power.
(2) Check that "HELLO!" appears in the FL display area.
(3) Press the MD button to select the MD function.
(4) Check that the following appears in the FL display area:

```
NO DISC
MD — — —
```

(5) Establish the service (inspection) mode by pressing the AUTO button within one second after the EXECUTE button and RUN SELECT buttons have been pressed together.
(6) "Ld Disc" appears in the FL display area. This completes the preparations for entering the service (inspection) mode.
(7) Disconnect the AC cord to release the service mode.

* EJECT, PLAY (continuous play), REC (continuous recording) and STOP operations can be performed in this mode.

b. Adjustment preparations

- Oscilloscope (100 MHz class)
- Jitter meter (DB-3260 : Kenwood)
  (1) Use the following probe.
  RF IN: Probe with attenuator (10:1)
  (2) Adjust the zero point of the meter before turning on the meter's power.
  (3) Wait about 15 minutes after turning on the power to allow the meter to warm up before starting the measurements.
  (4) Set the switch as shown below.
  <Rear panel> FB PRESET 40
  <Front panel> POLARITY ..... ⎍⎍
  FB CENTER 2.5V
  MODE ..... SIGMA
  RANGE 60/200
  FUNCTION ..... MEASURE
- Laser power meter (LE8010 : Leader)
  Zero point must be adjusted.
- Thermometer
- Test discs

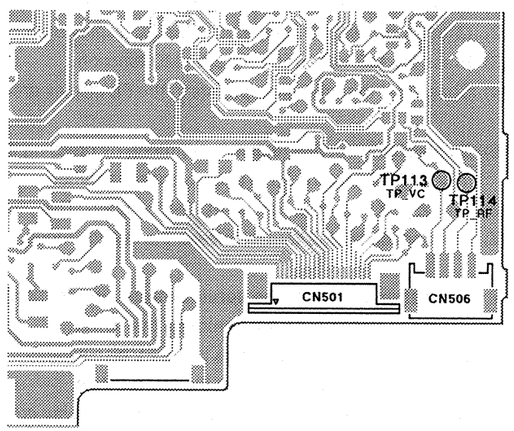
No.	Type	Description
1	AL disc	Play disc (TDYS1 : SONY)
2	MO disc A	Blank disc for recording (RDR-999)
3	MO disc B	Disc with test signals recorded on it (RDP-000)

- Connect the ground terminal of the measuring unit's probe to VC.

c. Adjustments

- Establish the service mode by pressing the MD EJECT button within one second after the ENT/YES button and REV MODE buttons have been pressed together. (Check that "T = 25 OK?" appears in the FL display area.)
- Use the jog dial to increase or decrease the adjustment value.
- Connect the measuring unit's probe to TP114 (TP_RF). Connect the ground terminal to TP113 (TP_VC).

STEP	Adjustment item
1	Temperature sensor offset compensation
2	Laser power adjustment (play)
3	Laser power adjustment (recording)
4	Pick-up initial position adjustment
5	Pre-mastered disc servo adjustment
6	Recordable disc play servo adjustment
7	Recordable disc recording servo adjustment



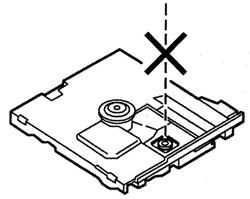
1. Temperature sensor offset compensation

Note: Perform this adjustment immediately after turning on the power when the temperature inside the unit will be the same as the ambient temperature.

- Turn the jog dial and set it to the current temperature.

2. Laser power adjustment (play power)

Note: The laser beam of the MD pick-up must NEVER be looked at directly from a position immediately above since its power is over 20 times greater than that for the CD.



(1) Press the ENT/YES button. ("LdSensor" appears on the FL display.)
(2) Insert the sensor of the laser power meter. ("MO READ" appears on the FL display.)
(3) Turn loading motor by hand, and put DISC up 3 mm.
(4) Turn the jog dial and adjust it in such a way that the laser power meter reading is set to 0.71 ± 0.05 mW.

3. Laser power adjustment (recording power)

(1) Press the ENT/YES button. ("Write" appears on the FL display.)
(2) Turn the jog dial and adjust it in such a way that the laser power meter reading is set to 6.85 ± 0.05 mW.

4. Pick-up initial position adjustment (automatic adjustment)

(1) Press the ENT/YES button. ("LdPreRec" appears on the FL display.)
(2) Insert the AL disc (TDYS1).
(3) The " ** 0ms " display appears for several seconds. (** is incremented or decremented from 10.)

5. Pre-mastered disc servo adjustment

(1) The FL display changes to "PreRec."
(2) Upon completion of the servo automatic adjustment, "A +00" appears on the FL display.
(3) When the jog dial is turned clockwise (" A +** " appears on the FL display), the jitter value increases. Turn the dial until the value is set to 25ns.
(4) Press the ENT/YES button. (" B +00 " appears on the FL display.)
(5) When the jog dial is turned counterclockwise (" B - ** " appears on the FL display), the jitter value increases. Turn the dial until the value is set to 25ns.
(6) Press the ENT/YES button. (The disc is ejected and "LdRead" appears on the FL display.)

6. Recordable disc play servo adjustment

(1) Insert MO disc B (RDP-000).
(2) "Recd Pit" appears on the FL display. Upon completion of the servo automatic adjustment for the pit area, "A +00" appears on the FL display.
(3) When the jog dial is turned clockwise ("A +**" appears on the FL display), the jitter value increases. Turn the dial until the value is set to 25 ns.
(4) Press the ENT/YES button. ("B +00" appears on the FL display.)
(5) When the jog dial is turned counterclockwise ("B -**" appears on the FL display), the jitter value increases. Turn the dial until the value is set to 25 ns.
(6) Press the ENT/YES button.
(7) "Recd Grv" appears on the FL display. Upon completion of the servo automatic adjustment in the groove area, "A +00" appears on the FL display.
(8) When the jog dial is turned clockwise ("A +**" appears on the FL display), the jitter value increases. Turn the dial until the value is set to 28ns.
(9) Press the ENT/YES button. ("B +00" appears on the FL display.)
(10) When the jog dial is turned counterclockwise ("B -**" appears on the FL display), the jitter value increases. Turn the dial until the value is set to 28ns.
(11) Press the ENT/YES button. (The disc is ejected and "LdWrite" appears on the FL display.)

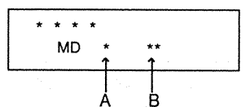
7. Recordable disc recording servo adjustment

(1) Insert MO disc A (RDR-999).
(2) "Rec Pwr" appears on the FL display. Upon completion of the servo automatic adjustment for the recording power, the FL display changes to "Complete," and the disc is ejected.
(3) Disconnect the AC cord.

d. MO disc record/play performance inspections and checks

- In order to check the lens position of the pick-up, conduct the checks with the unit laid flat.

(1) Connect the oscilloscope and jitter meter to the test point (TP114 = TP_RF).
(2) Establish the service (inspection) mode by pressing the AUTO button within one second after the ENT/YES button and REV MODE buttons have been pressed together. (Check that "Ld Disc" appears in the FL display area.)
(3) Insert MO disc A (blank disc for recording), and press the REC button.
(4) Check that the figure on the FL display is incremented from "0100."
(5) After recording for 10 or so seconds, press the STOP button.
(6) Press the PLAY button.
(7) Check that the figure on the top level of the FL display is incremented from "0100."



A : CRC error
B : C1 error

(8) Check the eye pattern waveforms on the oscilloscope.
(9) Check the error rate on the FL display and the jitter value on the jitter meter.
C1 error : Less than 50
Jitter : Less than 28ns
(10) Press the STOP button. After stopping playback, press the MD EJECT button to eject the disc.
(11) Disconnect the AC cord.

Main check flow

- Is "NO DISC" displayed or is TOC read operation performed when the MD position is set?
  - No → See the "MD microcomputer fails to operate" item.
  - Yes ↓
- Is the disc drawn inside the unit when it is inserted?
  - No → See the "Disc fails to be loaded properly" item.
  - Yes ↓
- Is the TOC data read properly?
  - No → See the "TOC reading" item.
  - Yes ↓
- Is play mode (with time display counting up) established?
  - No → Check the "Play" item.
  - Yes ↓
- Are audio signals OK?
  - No → Check the "Audio signals" item.
  - Yes ↓
- Is record/play operation performed?
  - No → Check the "Record/play" item.

MD microcomputer fails to operate.

- Is 5V supplied to P5V and D5V of CN571, and is 3.3V supplied to AVDD?
  - No → Check the "MD power is not supplied" item.
  - Yes ↓
- Is 3.3V output to IC561 pin 3?
  - No → Check IC561.
  - Yes ↓
- Are signals outputs to IC551 pins 34～38?
  - No → Check X5201 oscillation and connections of IC568 and IC569.

MD power is not supplied.

- Is the MDPCON pin of SYSCON PWB CN151 set to high?
  - No → Check the connections with IC151.
  - Yes ↓
- Is approx. 7.5V output to AMP PWB IC415 pin 1?
  - No → Check the AMP PWB, Q4902, Q4904 and Q4908 peripheral circuits. Check the continuity of PR403.
  - Yes ↓
- Is 5V output to IC415 pin 3?
  - No → Check IC415.
  - Yes ↓

Check the CN422 connections.

Disc fails to be loaded properly.

- Does the power come on when a disc is loaded?
  - No → Check that HDCADY SW level changes from high to low.
  - Yes ↓
- Is the disc drawn inside the unit?
  - No → Check that the IC551 pin 97 level changes from low to high. Check that the voltage between both ends of CN504 changes to 2.2V.
  - Yes ↓
- Is the disc ejected without the "NO DISC" display appearing?
  - No → Check that the LOADING SW level changes from high to low when the disc is drawn down inside the unit.
  - Yes ↓

See "Pick-up initial return."

TOC reading.

If TOC is read, it can be assumed that the play operation is more or less OK.

- Does the pick-up move to the initial position when a disc is inserted?
  - No → Check the "Pick-up initial return" item.
  - Yes ↓
- Is the laser power OK?
  - No → Check the "Laser power" item.
  - Yes ↓
- Does the spindle motor operate for a fixed period of time at the start?
  - No → Check the "Spindle kick" item.
  - Yes ↓
- Does the pick-up lens approach the disc first and then move away (focus search)?
  - No → Check the "Focus search" item.
  - Yes ↓
- Is the RF signal quite acceptable? (Is the eye opened acceptably?)
  - No → Check the "Focus servo" item.
  - Yes ↓

Check the IC523 connections.

For recordable discs only

- In the case of a recordable disc, does the pick-up access the area a little toward the outer perimeter after having traced the inside perimeter area?
  - Yes ↓
- Is the spindle rotation after access OK?
  - No → Check the "Recordable area spindle servo" item.
  - Yes ↓
- Is the tracking error signal after access disturbed?
  - Yes → Check the "Recordable area tracking servo" item.
  - No ↓
- In the case of an already recorded disc, is the RF signal acceptable?
  - No → Check the "Recordable area RF signal" item.

Pick-up initial return

Initial operation after power is turned on.

- Does the pick-up first move toward the outer perimeter and stop?
  - No → The IC551 pin 91 level remains low. Check R5521 and the wiring.
  - Yes ↓
- Does the pick-up move toward the inner perimeter and stop?
  - No → The IC551 pin 91 level fails to be set low. Check the wiring.
  - Yes ↓
- Are the signals output to IC521 pins 91 and 92?
  - Yes → Check IC531, and check the CN502 connections.
  - No ↓
- Is XRST high and is the signal output to SCLK, XLAT and SWDT?
  - Yes → Check the IC521 connections.
  - No → Check the IC551 connections.

Laser power check

Checks are conducted in the adjustment mode.

- Is approx. 0.2V during recording and approx. -1.5V during play output between APCREF and VC?
  - No → Check the IC521 circuits and connections.
  - Yes ↓
- Is approx. 0.2V during recording and approx. -1.5V during play output between PD and VC?
  - No → Check that LDON is high and MODON is high. Check that WRPWR is set high by the recording power and low by the play power.
  - Yes ↓
- Is the voltage between IOP and VCC approx. 0.1V during play and approx. 0.4V during recording?
  - No → Pick-up is shorted or damaged. (Replace it.)

Spindle kick

First, the spindle is rotated for a fixed period of time.

- Is the voltage between CN502 (SP+) and (SP-) approx. 3.1V?
  - Yes → Check the CN502 wiring, and check the mechanism.
  - No ↓
- Are the signals output to IC521 pins 93 and 94?
  - Yes → Check IC531.
  - No ↓
- Is the IC521 pin 10 (XRST) set high? Are the connections of pins 5 to 8 OK?
  - Yes → Check the connections.

Focus search

First, the lens is brought close to the disc and then moved away to find the focus point.

- Are the signals output to IC521 pins 88 and 89?
  - Yes → Check the IC531 circuits and the CN501 FCS+ and FCS- connection.
  - No ↓
- Check the IC521 connections.

Focus servo

- Is the focus search discontinuous? (Is focusing successful even for a moment, and is the servo ON operation performed?)
  - Yes → Check the connections from pin 4 to pin 7 of IC511. Check the connections from IC511 pin 34 to IC521 pin 65.
  - No ↓
- Does the MNTO (FOK) level change from low to high?
  - No → Check the connections from pin 4 to pin 7 of IC511. Check the MNTO (FOK) pin contact.
  - Yes ↓
- Is an S-curve signal output to FEI near where the MNTO (FOK) level is set high?
  - No → Check the connections from pin 4 to pin 7 of IC511. Check the pin 34 connection.
  - Yes → Check the IC521 pin 9 (SENS) connection.

Recordable area spindle servo

- Is the RF signal output to RFI?
  - No → Check the connections of IC511 pins 16, 17 and 18 and of IC521 pins 82, 81 and 80.
  - Yes ↓
- Is a sine wave signal output to ADIPFM?
  - No → Check the IC511 pin 25, 31 and 43 connections.
  - Yes ↓
- Is an approx. 22 kHz signal output to ADFG?
  - No → Check the IC511 pin 29 and 30 connections.

Recordable area tracking servo

- Does the small-groove jump operation after multi-groove access fail to be completed satisfactorily?
  - Yes → Check the IC521 pin 62, 63 and 64 connections.
  - No ↓
- Is the TEO waveform on track?
  - No → Check the connections of IC511 pins 16, 17 and 18 and of IC521 pins 82, 81 and 80.

Recordable area RF waveforms

- Is the RF signal jitter under approx. 28ns? (Has the RF eye opened?)
  - No → Re-check the focus bias adjustment.
  - Yes ↓
- Is the error rate under 50 in the inspection mode?
  - No → Check the already recorded signals, and check the disc for damage. Check the focus bias adjustment.
  - Yes ↓
- Check the IC551 pin 20 connection.

Record/play operation check

Insert the recordable disc and check that it can be played. Then conduct the following checks in the inspection mode and normal recording mode.

- Recording operation check in inspection mode
- Is RF waveform output to RFI in the record/play mode?
  - Yes → Check IC521 and IC523.
  - No ↓
- Are recording waveforms output to both ends of magnetic head during recording?
  - Yes → Check whether the magnetic head has a broken wire or is out of position.
  - No ↓
- Are recording waveforms output to IC521 pin 100 (EFMO)?
  - No → Check the IC521 connections.
  - Yes ↓
- Is the IC551 pin 21 SCTX level high during recording?
  - No → Check the IC551 connections.
  - Yes ↓
- Is the voltage between both ends of R5111 approx. 0.4V during recording?
  - No → If it is less than 0.4V, check the pick-up for damage; if it is more than 0.4V, check the APC circuit.
  - Yes ↓
- Is it impossible to start recording from the CD?
  - No → Is it impossible to record other signals as well?
  - Yes ↓
- Are signals present at DIN during recording standby?
  - No → Check the IC569 and CN571 connections, and check the AMP PWB connections.
  - Yes → Check the IC551 connections.
- Is it impossible to record other signals as well?
  - No → OK
  - Yes ↓
- Are audio signals present at IC591 pins 3 and 6?
  - No → Check the CN571 connections, and check the SYSCON and AMP PWB connections.
  - Yes ↓
- Are digital signals present at IC591 pin 12?
  - No → Check the IC591 connections.
  - Yes → Check the connections with IC551.

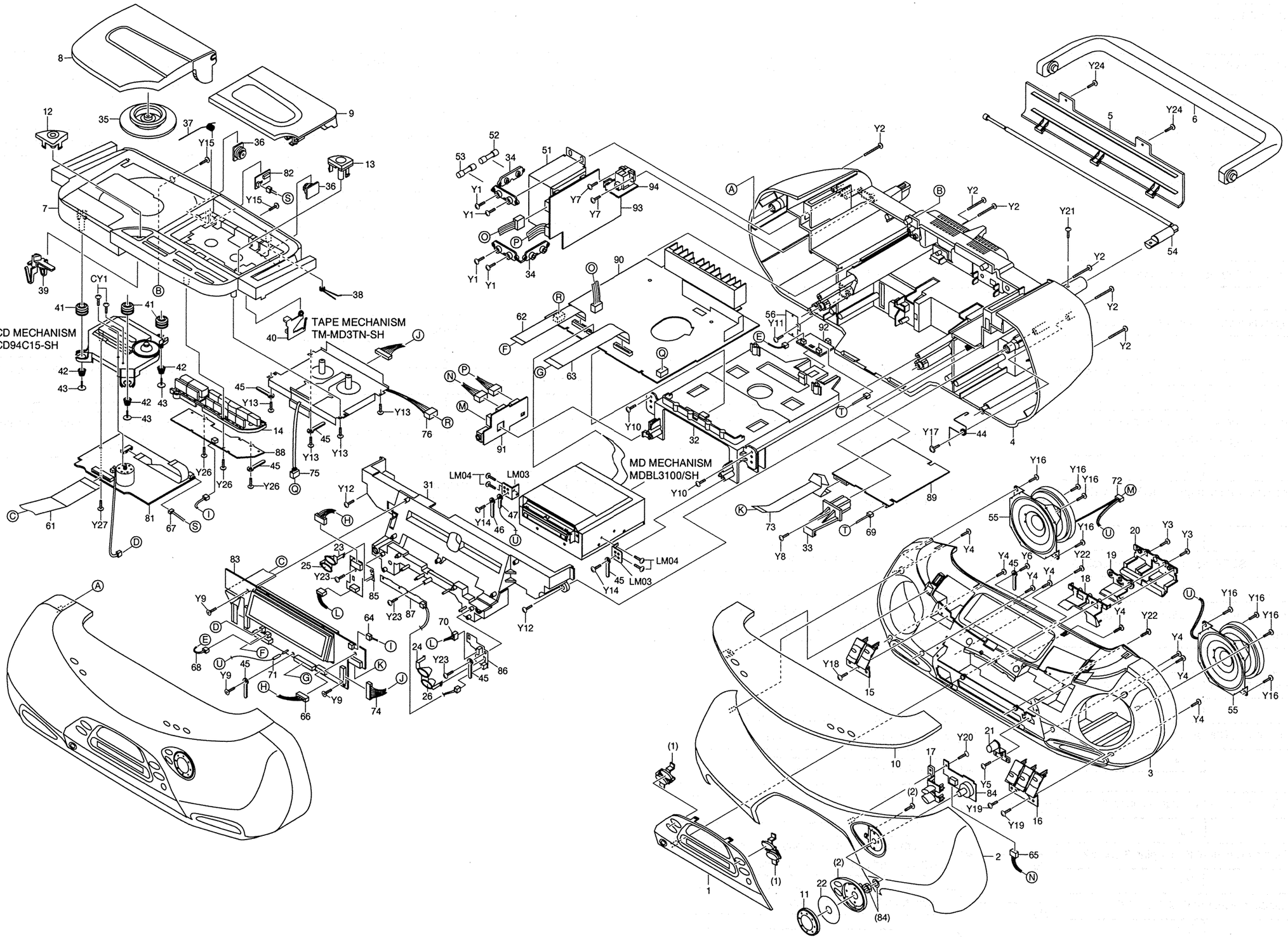
Audio playback circuit

- Are audio signals output to AOUTL and AOUTR of CN571?
  - No → Check the CN571 connections, and check the SYSCON and AMP PWB connections.
  - Yes ↓
- Are digital signals present at IC591 pins 9 to 11 and 15?
  - No → Check the connections of the IC521 pins.
  - Yes ↓
- Check the power supply of IC591, and check that pin 8 is high.

Play

- Does the track jump focus?
  - No → Check the MNT0 (TCOUNT) and MNT3 (OFTRK) signal connections.
  - Yes ↓
- Is the error rate over 50 in the inspection mode?
  - Yes → Check the disc for damage, and perform the adjustments again.
  - No ↓
- Check the IC521 connections.

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

EACH PRECAUTION IN THIS MANUAL SHOULD BE FOLLOWED DURING SERVICING. COMPONENTS IDENTIFIED WITH THE IEC SYMBOL ⚠ IN THE PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATED COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. WHEN REPLACING A COMPONENT IDENTIFIED BY ⚠, USE ONLY THE REPLACEMENT PARTS DESIGNATED, OR PARTS WITH THE SAME RATINGS OF RESISTANCE, WATTAGE OR VOLTAGE THAT ARE DESIGNATED IN THE PARTS LIST IN THIS MANUAL. LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS MUST BE MADE TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE PRODUCT TO THE CUSTOMER.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.
Regular type resistors are less than 1/4 W carbon type and 0 ohm chip resistors.
Regular type capacitors are less than 50 V and less than 1000 μF type of Ceramic type and Electrical type.

N.S.P : Not available as service parts.

PACKING & ACCESSORIES

REF.NO.	PART NO.	DESCRIPTION
	614 298 2068	CARTON CASE (XE)
	614 297 4933	CARTON CASE (UK)
	614 287 6800	CUSHION,TOP
	614 287 6817	CUSHION,BOTTOM
	614 290 3360	CUSHION,CARTON
	645 011 1341	POLY SHEET,800X800,SET (XE)
	614 228 0331	SHEET,800X800,SET COVER (UK)
	614 298 2075	INSTRUCTION MANUAL (XE)
	614 298 2082	INSTRUCTION MANUAL (UK)
	645 020 7020	ASSY,ANTENNA,LOOP
	645 028 0597	REMOTE CONTROL,RB-MD3100
	614 285 3993	BATTERY COVER,REMOTE CONTROL
	⚠ 645 006 4630	PLUG,ADAPTOR AC (XE)
or	⚠ 645 017 2175	PLUG,ADAPTOR AC (XE)
	⚠ 614 235 7859	POWER CORD (XE)
or	⚠ 614 023 1779	POWER CORD (XE)
	⚠ 645 007 1416	POWER CORD (UK)
or	⚠ 645 005 7137	POWER CORD (UK)

CABINET & CHASSIS

REF.NO.	PART NO.	DESCRIPTION
1	614 297 3844	ASSY,PANEL FRONT
2	614 295 4898	ASSY,PANEL NET
3	614 295 5598	ASSY,CABINET
4	614 297 4704	ASSY,CABINET,REAR (XE)
4	614 297 4711	ASSY,CABINET,REAR (UK)
5	614 299 2685	LID,BATTERRY
6	614 295 5758	HANDLE
7	614 297 3899	PANEL,TOP,C-CASS
8	614 295 5772	LID,CD
9	614 297 4025	ASSY,LID CASSETTE
10	614 297 4063	DEC,WINDOW,FL
11	614 286 1325	KNOB,ROTARY,JOG
12	614 295 5680	BUTTON,CD,EJECT
13	614 295 5666	BUTTON,EJECT,MECHA
14	614 295 5673	BUTTON,TOP,MECHA
15	614 286 1257	BUTTON,POWER
16	614 286 1240	BUTTON,MD,MODE
17	614 297 4056	BUTTON,JOG
18	614 286 1158	BUTTON,1,MD
19	614 286 1165	BUTTON,2,MD
20	614 286 1172	BUTTON,3,MD
21	614 286 1202	BUTTON,MD,EJECT
22	614 285 6291	DEC,SHEET JOG
23	614 286 1417	MOUNTING,LED(L)
24	614 286 5316	MOUNTING,LED(R)
25	614 286 1301	DEC,SHEET,BUTTON,LED(L)
26	614 286 1318	DEC,SHEET,BUTTON,LED(R)
31	614 286 1387	MOUNTING,SYSCON
32	614 297 6654	MOUNTING,MD
33	614 271 5130	MOUNTING,TU FIX
34	614 272 3852	MOUNTING,TRANS
35	614 277 6780	ASSY,PULLEY
36	614 270 8316	ASSY,GEAR,CD/CASSETTE
37	614 284 7084	SPRING,WIRE,LID CD
38	614 290 9195	SPRING,WIRE CASSETTE,LID
39	614 286 1363	LEVER,CD,EJECT
40	614 285 3634	LEVER,EJECT,MECHA
41	614 270 2178	DAMPER,CD-MECHA
42	614 240 8308	SPRING,COMP,CD-MECHA
43	412 032 6408	SPECIAL SCREW,CD-MECHA
44	614 285 3795	SPRING,WIRE,ROD ANT
45	614 129 9136	LUG,LEAD FIX
46	614 130 0382	LUG,LEAD DRESS
47	614 129 9082	LUG,CN115
48	614 289 5696	DEC,SHEET
	614 258 3883	CUSHION,CABINET REAR,3X15X23
	614 110 8414	SHEET,MD-MECHA,8X12X0.2
	614 290 3926	SPACER,PANEL TOP
	614 298 5311	SHIELD,PANEL TOP
	614 289 7058	CUSHION,PANEL,TOP
	614 125 0601	CUSHION,MOUNT, SYSCON PANEL,TOP

FIXING PARTS

REF.NO.	PART NO.	DESCRIPTION
Y01	411 026 4307	SCR S-TPG PAN 3X25,TRANS
Y02	411 021 4906	SCR S-TPG BIN 3X20,CABI-REAR
Y03	411 020 9407	SCR S-TPG BRZ+FLG 3X14, BUTTON 1,2,3
Y04	411 021 4005	SCR S-TPG BIN 3X12,PANEL NET
Y05	411 021 4005	SCR S-TPG BIN 3X12, BUTTON MD EJECT
Y06	411 021 4005	SCR S-TPG BIN 3X12,LEAD FIX
Y07	411 021 4005	SCR S-TPG BIN 3X12,AC SOCKET
Y08	411 021 4005	SCR S-TPG BIN 3X12,TU PWB
Y09	411 021 4005	SCR S-TPG BIN 3X12,SYS PWB
Y10	411 021 4005	SCR S-TPG BIN 3X12,MOUNT MD
Y11	411 021 4005	SCR S-TPG BIN 3X12, BATT PWB FOR CLOSE
Y12	411 021 4005	SCR S-TPG BIN 3X12, MOUNT SYSCON
Y13	411 021 4005	SCR S-TPG BIN 3X12,C-MECHA
Y14	411 021 4005	SCR S-TPG BIN 3X12,MD MECHA
Y15	411 021 4104	SCR S-TPG BIN 3X12,PANEL TOP
Y16	411 020 8905	SCR S-TPG BRZ+FLG 3X10,SPEAKER
Y17	411 020 8905	SCR S-TPG BRZ+FLG 3X10, ANT TERMINAL
Y18	411 021 3503	SCR S-TPG BIN 3X10, BUTTON POWER
Y19	411 021 3503	SCR S-TPG BIN 3X10, BUTTON MD MODE
Y20	411 022 3007	SCR S-TPG FLT 3X12,BUTTON JOG
Y21	411 001 8801	SCR BIN 3X6,ROD ANT
Y22	411 165 3803	SCR S-TPG BIN 2.3X10,PANEL MD
Y23	411 098 4700	SCR S-TPG BIN 2.3X8,F-SW PWB
Y24	411 170 7704	SCR S-TPG BIN 2.3X8, LID BATTERY FOR CLOSE
Y26	411 165 3803	SCR S-TPG BIN 2.3X10,T-SW PWB
Y27	411 022 8408	SCR S-TPG PAN 2X8,PWB FIX

ELECTRICAL PARTS

REF.NO.	PART NO.	DESCRIPTION
51	⚠ 645 028 0580	TRANS,POWER
52	⚠ 423 016 8103	FUSE 250V 4A
53	⚠ 423 016 7908	FUSE 250V 2.5A
54	614 237 5051	ANTENNA,ROD
or	614 240 6564	ANTENNA,ROD
55	645 018 9616	SPEAKER,3
56	614 284 9859	PWB,BRACKET
61	645 023 2565	FLEXIBLE FLAT CABLE,CD-SYSCON
62	645 023 2787	FLEXIBLE FLAT CABLE,SYSCON-AMP
63	645 026 6874	FLEXIBLE FLAT CABLE,SYSCON-AMP
64	645 023 3012	CORD,ID CONNECTOR,SYSCON-SW
or	614 291 0627	ASSY,WIRE,SYSCON-SW
65	645 023 3043	CORD,ID CONNECTOR,JOG-H.P
66	645 023 3050	CORD,ID CONNECTOR,SYSCON-SW
67	645 023 2985	CORD,ID CONNECTOR,CD-SW
or	614 291 0634	ASSY,WIRE
68	645 023 3029	CORD,ID CONNECTOR, SYSCON-RESET
69	645 023 2800	CORD,ID CONNECTOR,TU-ANT
70	645 023 3036	CORD,ID CONNECTOR,SW-SW
71	645 023 3067	CORD,SOCKET,SYSCON-MD
72	614 286 4449	CORD,4P CONNECTOR,SPEAKER
73	645 013 7891	FLEXIBLE FLAT CABLE,TU-SYSCON
74	645 023 2336	CORD,ID CONNECTOR
75	614 291 3079	CORD,5P CONNECTOR
76	614 286 4432	CORD,4P CONNECTOR

CD P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
81	614 297 6241	ASSY,PWB,CD (N.S.P)
CN141	645 012 5553	SOCKET,FPC 22P,SYSCON
CN142	614 287 4813	CORD,2P CONNECTOR,SYSCON
CN143	645 010 1472	SOCKET,FPC 13P,CD MECHA
CN144	645 006 0908	PLUG,2P,CD OPEN SW
IC131	409 419 4300	IC CXA1782CQ
IC141	⚠ 409 390 8403	IC BA5941FP
IC142	409 386 7502	IC CXD2508AQ
IC143	409 192 7109	IC BA15218F
or	409 241 5506	IC XRA15218F
PR101	⚠ 645 029 2446	PROTECTOR,1A 125V
Q1301	405 008 7509	TR 2SB815-B6
or	405 008 7707	TR 2SB815-B7
Q1302	405 002 0308	TR 2SA1037K-R
or	405 005 5508	TR 2SA812-M6
Q1451	405 006 4005	TR 2SA952-L
or	405 006 3909	TR 2SA952-K
or	405 007 6701	TR 2SB598-F-NP
Q1454	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
Q1782	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
Q1882	405 014 4509	TR 2SC2412K-R
or	405 011 1006	TR 2SC1623-L6
R1301	401 037 5400	MT-GLAZE 1K JA 1/10W
R1302	401 037 6506	MT-GLAZE 12 JA 1/10W
R1303	401 038 6307	MT-GLAZE 470 JA 1/10W
R1304	401 038 6505	MT-GLAZE 47K JA 1/10W
R1305	401 038 5102	MT-GLAZE 3.9K JA 1/10W
R1306	401 038 5102	MT-GLAZE 3.9K JA 1/10W
R1307	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1308	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R1309	401 037 8203	MT-GLAZE 1.5M JA 1/10W
R1310	401 038 7809	MT-GLAZE 56K JA 1/10W
R1311	401 037 5608	MT-GLAZE 10K JA 1/10W
R1312	401 037 5608	MT-GLAZE 10K JA 1/10W
R1313	401 038 0909	MT-GLAZE 220K JA 1/10W
R1314	401 035 5204	MT-GLAZE 10K JA 1/8W
R1315	401 037 5608	MT-GLAZE 10K JA 1/10W
R1316	401 037 9200	MT-GLAZE 1.8K JA 1/10W
R1317	401 038 7809	MT-GLAZE 56K JA 1/10W
R1319	401 037 5608	MT-GLAZE 10K JA 1/10W
R1320	401 037 5608	MT-GLAZE 10K JA 1/10W
R1321	401 037 6902	MT-GLAZE 120K JA 1/10W
R1322	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1323	401 038 7908	MT-GLAZE 560K JA 1/10W
R1351	401 037 8104	MT-GLAZE 150K JA 1/10W
R1352	401 035 8205	MT-GLAZE 150K JA 1/8W
R1353	401 037 6902	MT-GLAZE 120K JA 1/10W
R1354	401 037 8005	MT-GLAZE 15K JA 1/10W
R1355	401 037 5707	MT-GLAZE 100K JA 1/10W
R1357	401 037 0702	MT-GLAZE 560K JA 1/8W
R1358	401 036 6903	MT-GLAZE 390K JA 1/8W
R1359	401 037 6803	MT-GLAZE 12K JA 1/10W
R1361	401 037 8104	MT-GLAZE 150K JA 1/10W
R1362	401 039 0502	MT-GLAZE 82K JA 1/10W
R1363	401 038 0800	MT-GLAZE 22K JA 1/10W
R1368	401 038 5300	MT-GLAZE 39K JA 1/10W
R1369	401 038 9407	MT-GLAZE 680K JA 1/10W
R1401	401 038 0602	MT-GLAZE 220 JA 1/10W
R1415	401 038 9308	MT-GLAZE 68K JA 1/10W
R1416	401 038 5300	MT-GLAZE 39K JA 1/10W
R1417	401 038 3702	MT-GLAZE 33K JA 1/10W
R1418	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1419	401 038 2200	MT-GLAZE 27K JA 1/10W
R1420	401 038 2200	MT-GLAZE 27K JA 1/10W
R1441	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R1442	401 038 0602	MT-GLAZE 220 JA 1/10W
R1443	401 035 5402	MT-GLAZE 100K JA 1/8W
R1451	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1452	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1453	401 037 5608	MT-GLAZE 10K JA 1/10W
R1454	401 037 5608	MT-GLAZE 10K JA 1/10W
R1455	401 037 5707	MT-GLAZE 100K JA 1/10W
R1456	401 035 4900	MT-GLAZE 1K JA 1/8W
R1457	401 037 5806	MT-GLAZE 1M JA 1/10W
R1458	401 037 5608	MT-GLAZE 10K JA 1/10W
R1459	401 038 6307	MT-GLAZE 470 JA 1/10W
R1461	401 037 5707	MT-GLAZE 100K JA 1/10W
R1462	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R1463	401 037 5608	MT-GLAZE 10K JA 1/10W
R1464	401 038 6307	MT-GLAZE 470 JA 1/10W
R1465	401 038 6307	MT-GLAZE 470 JA 1/10W
R1466	401 037 5608	MT-GLAZE 10K JA 1/10W
R1467	401 037 5608	MT-GLAZE 10K JA 1/10W
R1471	401 037 5608	MT-GLAZE 10K JA 1/10W
R1472	401 037 9309	MT-GLAZE 18K JA 1/10W
R1474	401 037 5707	MT-GLAZE 100K JA 1/10W
R1475	401 037 5400	MT-GLAZE 1K JA 1/10W
R1476	401 037 5400	MT-GLAZE 1K JA 1/10W
R1477	401 037 5400	MT-GLAZE 1K JA 1/10W
R1485	401 038 7601	MT-GLAZE 560 JA 1/10W
R1491	401 037 5400	MT-GLAZE 1K JA 1/10W
R1492	401 038 7601	MT-GLAZE 560 JA 1/10W
R1493	401 038 7601	MT-GLAZE 560 JA 1/10W

REF.NO.	PART NO.	DESCRIPTION
R1781	401 037 5400	MT-GLAZE 1K JA 1/10W
R1782	401 038 0909	MT-GLAZE 220K JA 1/10W
R1783	401 037 5608	MT-GLAZE 10K JA 1/10W
R1784	401 037 5608	MT-GLAZE 10K JA 1/10W
R1785	401 037 5608	MT-GLAZE 10K JA 1/10W
R1786	401 037 5608	MT-GLAZE 10K JA 1/10W
R1787	401 037 5608	MT-GLAZE 10K JA 1/10W
R1788	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R1789	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R1881	401 037 5400	MT-GLAZE 1K JA 1/10W
R1882	401 038 0909	MT-GLAZE 220K JA 1/10W
R1883	401 037 5608	MT-GLAZE 10K JA 1/10W
R1884	401 037 5608	MT-GLAZE 10K JA 1/10W
R1885	401 037 5608	MT-GLAZE 10K JA 1/10W
R1886	401 037 5608	MT-GLAZE 10K JA 1/10W
R1887	401 037 5608	MT-GLAZE 10K JA 1/10W
R1888	401 038 9209	MT-GLAZE 6.8K JA 1/10W
R1889	401 038 9209	MT-GLAZE 6.8K JA 1/10W
S1301	645 012 5836	SWITCH,LEAF
or	645 019 2661	SWITCH,LEAF
VR131	645 010 7597	VR,SEMI,47K N
X1451	645 009 0790	OSC,CRYSTAL 33.8688MHZ

CD OPEN SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
82	614 297 7002	ASSY,PWB,CD OPEN SW (N.S.P)
CN168	645 005 7366	PLUG,2P,CD
S1681	614 249 1355	SWITCH,LEVER

SYSCON P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
83	614 297 6944	ASSY,PWB,SYSCON (N.S.P)
A1501	645 020 3695	FLOURESCENT TUBE
AM151	614 112 1536	DOUBLE FACE,FL HOLD
BR151	614 286 1400	MOUNTING,FL
C1550	403 296 7508	DL-ELECT 1F Z 5.5V
CN150	614 254 3597	TERMINAL
or	614 221 8273	TERMINAL
CN151	645 012 5270	SOCKET,FPC 23P,AMP
CN152	645 012 5249	SOCKET,FPC 20P,AMP
CN153	645 012 5553	SOCKET,FPC 22P,CD
CN154	645 006 0984	PLUG,11P,TAPE MECHA
CN155	645 012 5461	SOCKET,FPC 13P,TUNER
CN156	645 006 0861	PLUG,7P,CD REC SW
CN157	645 006 0908	PLUG,2P,CD/RADIO SW
CN158	645 005 7366	PLUG,2P,AM ANT./RESET SW
CN159	645 005 9995	PLUG,2P,CD
D1501	407 012 4406	DIODE 1SS133
D1502	407 012 4406	DIODE 1SS133
D1503	407 012 4406	DIODE 1SS133
D1504	407 012 4406	DIODE 1SS133
D1506	407 012 4406	DIODE 1SS133
D1507	407 012 4406	DIODE 1SS133
D1508	407 012 4406	DIODE 1SS133
D1513	407 012 4406	DIODE 1SS133
D1514	407 012 4406	DIODE 1SS133
D1517	407 159 0309	PHOTO DIODE SPS-424-1
D1521	407 148 6701	DIODE 1A3-I
D1522	407 148 6701	DIODE 1A3-I
D1523	407 148 6701	DIODE 1A3-I
IC151	410 314 9000	IC M38199MF-079FP
IC152	409 295 0007	IC M66004FP
IC153	409 350 6807	IC M62009FP
IC154	409 350 6906	IC TC74VHC04F
IC155	409 195 1906	IC M5278L56
L1502	645 002 1459	INDUCTOR,22U K
L1503	645 001 4666	INDUCTOR,220U K
LG151	645 006 4425	FIXER
Q1506	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1507	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1508	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1511	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1514	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1515	405 105 8201	TR 2SB1132-Q
or	405 105 8300	TR 2SB1132-R
Q1516	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1517	405 105 8201	TR 2SB1132-Q
or	405 105 8300	TR 2SB1132-R
Q1521	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1522	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1523	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1524	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1526	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1527	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1528	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1529	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1530	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1532	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1533	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
Q1535	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
Q1536	405 000 2908	TR DTC114EK
or	405 113 5902	TR FA1A4M
R1001	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1003	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1004	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1005	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1006	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1007	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1051	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1052	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1053	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1054	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1055	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1056	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1057	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R1058	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1059	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1060	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1061	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1062	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1063	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1064	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1065	401 035 4108	MT-GLAZE 0.000 ZA 1/8W

REF.NO.	PART NO.	DESCRIPTION
R1066	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1067	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1068	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1070	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R1501	401 037 5400	MT-GLAZE 1K JA 1/10W
R1502	401 037 5400	MT-GLAZE 1K JA 1/10W
R1503	401 037 5400	MT-GLAZE 1K JA 1/10W
R1507	401 037 5400	MT-GLAZE 1K JA 1/10W
R1508	401 037 5400	MT-GLAZE 1K JA 1/10W
R1510	401 037 5202	MT-GLAZE 100 JA 1/10W
R1511	401 037 5400	MT-GLAZE 1K JA 1/10W
R1512	401 037 5400	MT-GLAZE 1K JA 1/10W
R1513	401 037 5400	MT-GLAZE 1K JA 1/10W
R1514	401 037 5400	MT-GLAZE 1K JA 1/10W
R1518	401 037 5400	MT-GLAZE 1K JA 1/10W
R1519	401 038 6505	MT-GLAZE 47K JA 1/10W
R1520	401 037 5400	MT-GLAZE 1K JA 1/10W
R1521	401 037 5707	MT-GLAZE 100K JA 1/10W
R1523	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1524	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1528	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1529	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1530	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1531	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1532	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1533	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1534	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1535	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1536	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1537	401 037 5608	MT-GLAZE 10K JA 1/10W
R1538	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1539	401 038 7601	MT-GLAZE 560 JA 1/10W
R1546	401 038 6505	MT-GLAZE 47K JA 1/10W
R1547	401 037 5400	MT-GLAZE 1K JA 1/10W
R1548	401 037 5400	MT-GLAZE 1K JA 1/10W
R1549	401 038 6505	MT-GLAZE 47K JA 1/10W
R1551	401 037 5608	MT-GLAZE 10K JA 1/10W
R1552	401 037 5608	MT-GLAZE 10K JA 1/10W
R1554	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1555	401 038 6307	MT-GLAZE 470 JA 1/10W
R1556	401 038 6307	MT-GLAZE 470 JA 1/10W
R1557	401 038 7502	MT-GLAZE 56 JA 1/10W
R1560	401 094 1902	MT-GLAZE 10M JA 1/10W
R1561	401 094 1902	MT-GLAZE 10M JA 1/10W
R1562	401 037 8104	MT-GLAZE 150K JA 1/10W
R1563	401 037 5400	MT-GLAZE 1K JA 1/10W
R1565	401 037 5400	MT-GLAZE 1K JA 1/10W
R1567	401 037 5400	MT-GLAZE 1K JA 1/10W
R1569	401 038 6208	MT-GLAZE 47 JA 1/10W
R1570	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1571	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1572	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1573	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1574	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1575	401 037 5400	MT-GLAZE 1K JA 1/10W
R1580	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1582	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1584	401 038 6505	MT-GLAZE 47K JA 1/10W
R1585	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1586	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1587	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1588	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1589	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1590	401 038 6505	MT-GLAZE 47K JA 1/10W
R1591	401 038 6505	MT-GLAZE 47K JA 1/10W
R1592	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R1593	401 038 5003	MT-GLAZE 390 JA 1/10W
R1594	401 038 5003	MT-GLAZE 390 JA 1/10W
R1595	401 038 6307	MT-GLAZE 470 JA 1/10W
R1596	401 038 7601	MT-GLAZE 560 JA 1/10W
R1598	614 253 8050	RESISTOR
R1599	614 253 8050	RESISTOR
S1501	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1502	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1503	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1504	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1505	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
SH151	614 267 7506	SHIELD
X1501	645 027 5487	OSC,CERAMIC 8MHZ
X1502	614 252 7627	RESONATOR,XTAL
XF151	645 025 6455	FILTER,EMI 270PF

JOG SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
84	614 297 6951	ASSY,PWB,JOG SW (N.S.P)
CN161	645 006 0922	PLUG,5P,HEADPHONE
R1601	401 038 5003	MT-GLAZE 390 JA 1/10W
R1602	401 037 5400	MT-GLAZE 1K JA 1/10W
R1603	401 037 5400	MT-GLAZE 1K JA 1/10W
S1601	645 021 0990	SWITCH,ROTARY(ENCODER)
S1602	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1603	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT

CD REC SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
85	614 297 6968	ASSY,PWB,CD REC SW (N.S.P)
CN162	645 006 0946	PLUG,7P,SYSCON
CN163	645 005 9292	PLUG,5P,MD REC SW
D1611	408 020 2705	LED SLP-4117E-51-T1
D1612	408 020 2606	LED SLP-3117E-51S-T1
Q1611	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
Q1612	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
R1611	401 038 5003	MT-GLAZE 390 JA 1/10W
R1612	401 038 6307	MT-GLAZE 470 JA 1/10W
R1613	401 037 7800	MT-GLAZE 150 JA 1/10W
R1614	401 037 7800	MT-GLAZE 150 JA 1/10W
R1615	401 037 5608	MT-GLAZE 10K JA 1/10W
R1616	401 037 5608	MT-GLAZE 10K JA 1/10W
S1611	614 220 5433	SWITCH,TACT
or	614 240 0982	SWITCH,TACT
S1612	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT

PARTS LIST

MD REC SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
86	614 297 6975	ASSY,PWB,MD REC SW (N.S.P)
CN164	645 005 9292	PLUG,5P,CD REC SW
CN165	645 005 7366	PLUG,2P,MD SW
D1621	408 020 2606	LED SLP-3117E-51S-T1
D1622	408 020 2606	LED SLP-3117E-51S-T1
Q1621	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
Q1622	405 000 1109	TR DTA124EK
or	405 113 8200	TR FN1F4M
R1621	401 038 7601	MT-GLAZE 560 JA 1/10W
R1622	401 038 9001	MT-GLAZE 680 JA 1/10W
R1623	401 039 0304	MT-GLAZE 820 JA 1/10W
R1624	401 037 7800	MT-GLAZE 150 JA 1/10W
R1625	401 037 7800	MT-GLAZE 150 JA 1/10W
R1626	401 037 5608	MT-GLAZE 10K JA 1/10W
R1627	401 037 5608	MT-GLAZE 10K JA 1/10W
S1621	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1622	645 006 2827	SWITCH,PUSH 1P-1T
or	614 220 5495	SWITCH,TACT
or	614 240 1088	SWITCH,TACT
S1623	614 220 5433	SWITCH,TACT
or	614 240 0982	SWITCH,TACT

MD SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
87	614 297 6982	ASSY,PWB,MD SW (N.S.P)
CN166	645 009 9281	CORD,ID-CONNECTOR,MD REC SW
R1631	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R1632	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R1633	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1634	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1635	401 038 7700	MT-GLAZE 5.6K JA 1/10W
S1631	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1632	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1633	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1634	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1635	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT

CD / RADIO SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
88	614 297 6999	ASSY,PWB,CD/RADIO SW (N.S.P)
CN167	645 006 0908	PLUG,2P,SYSCON
R1641	401 038 5003	MT-GLAZE 390 JA 1/10W
R1642	401 038 5003	MT-GLAZE 390 JA 1/10W
R1643	401 038 6307	MT-GLAZE 470 JA 1/10W
R1644	401 038 7601	MT-GLAZE 560 JA 1/10W
R1645	401 038 9001	MT-GLAZE 680 JA 1/10W
R1646	401 039 0304	MT-GLAZE 820 JA 1/10W
R1647	401 037 6704	MT-GLAZE 1.2K JA 1/10W
R1648	401 037 7909	MT-GLAZE 1.5K JA 1/10W
R1649	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R1650	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R1651	401 038 7700	MT-GLAZE 5.6K JA 1/10W
R1652	401 037 5608	MT-GLAZE 10K JA 1/10W
S1641	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT

REF.NO.	PART NO.	DESCRIPTION
S1642	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1643	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1644	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1645	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1646	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1647	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1648	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1649	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1650	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1651	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1652	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT
S1653	645 006 5958	SWITCH,PUSH 1P-1T
or	614 220 5471	SWITCH,TACT

TUNER P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
89	614 297 6937	ASSY,PWB,TUNER (N.S.P)
C2131	403 082 0201	POLYPRO 470P J 100V
C2214	403 154 2102	NP-ELECT 1U M 50V
CN201	645 012 5461	SOCKET,FPC 13P
CN202	645 004 2683	PLUG,2P
CN211	614 254 3597	TERMINAL
or	614 221 8273	TERMINAL
CT201	645 017 2687	TRIMMER,10PF
or	614 007 6356	TRIMMER
or	645 012 7731	TRIMMER,11PF
D2001	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D2002	407 157 5702	KV1370NT1
D2003	407 157 5702	KV1370NT1
D2101	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D2102	407 154 7501	VARACTOR DI SVC344
D2105	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
IC201	409 016 0200	IC LA1186N-AUDIO
IC211	409 379 2705	IC LA1832ML
IC221	409 378 4205	IC LC72131MD
L2001	645 012 0664	INDUCTOR,AIR 0.1U
L2002	614 035 0494	V.H.F COIL
or	614 229 0231	V.H.F COIL
L2003	645 002 1534	INDUCTOR,8.2U K
L2102	614 253 4656	TRANS,RF
L2204	614 253 4649	TRANS,OSC
Q2001	405 016 0806	TR 2SC2839-E
Q2002	405 018 7902	TR 2SC380TM-O
or	405 016 0608	TR 2SC2839-D
Q2101	405 036 3702	TR 2SA1564
or	405 000 0904	TR DTA114YS
Q2102	405 037 0809	TR 2SC4048
Q2110	405 016 0806	TR 2SC2839-E
Q2201	405 036 3702	TR 2SA1564
or	405 000 0904	TR DTA114YS
Q2202	405 037 0809	TR 2SC4048

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
Q2206	405 036 3702	TR 2SA1564
or	405 000 0904	TR DTA114YS
Q2207	405 082 4609	TR DTA123YS
SH201	614 256 3052	SHIELD
SH202	614 256 3052	SHIELD
X2101	614 246 0870	RESONATOR
or	645 010 0024	OSC,CERAMIC 456KHZ
X2201	614 229 2457	CRYSTAL
XF201	614 252 1045	FILTER,LC
XF211	614 229 3805	FILTER
or	645 009 3609	CERAMIC FILTER 10.65MHZ
XF212	614 229 3805	FILTER
or	645 009 3609	CERAMIC FILTER 10.65MHZ
XF213	614 246 0849	FILTER
XF214	645 006 7624	DISCR,CERAMIC
or	645 008 5680	DISCR,CERAMIC

AMPLIFIER P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
90	614 298 2464	ASSY,PWB,AMP (N.S.P)
C4748	403 175 1009	MT-POLYEST 0.15U J 50V
C4751	403 330 2001	ELECT 2200U M 16V
C4848	403 175 1009	MT-POLYEST 0.15U J 50V
C4851	403 330 2001	ELECT 2200U M 16V
C4901	403 062 9507	POLYESTER 6800P J 50V
C4902	403 063 5300	POLYESTER 8200P J 50V
C4929	403 330 2209	ELECT 6800U M 25V
C4936	403 330 2001	ELECT 2200U M 16V
C4940	403 330 2100	ELECT 6800U M 16V
C4965	403 168 6103	MT-POLYEST 0.1U J 50V
CN401	645 005 1111	JACK,PHONE D3.6
CN402	614 229 3812	JACK
or	645 013 8621	JACK,PHONE D3.6
CN411	645 005 9292	PLUG,5P,TAPE MECHA HEAD
or	645 007 0082	PLUG,5P,TAPE MECHA HEAD
CN412	645 005 8110	PLUG,4P,TAPE MECHA MOTOR
or	645 007 0075	PLUG,4P,TAPE MECHA MOTOR
CN413	614 020 1239	SOCKET,4P,POWER SUPPLY
CN420	645 012 5270	SOCKET,FPC 23P,SYSCON
CN421	645 012 5249	SOCKET,FPC 20P,SYSCON
CN422	645 017 8863	SOCKET,FPC 20P,MD
CN423	614 035 4959	SOCKET,DIP 6P,HEADPHONE
or	614 255 4036	SOCKET,6P,HEADPHONE
CN424	645 012 2743	SOCKET,DIP 9P,HEADPHONE
or	614 249 3847	SOCKET,9P,HEADPHONE
CN430	614 123 2379	TERMINAL
or	614 258 0462	TERMINAL
CN433	614 273 8962	CORD,4P CONNECTOR
D4901	407 063 9207	ZENER DIODE MTZJ7.5B
D4902	407 100 0303	ZENER DIODE MTZJ36B
D4904	407 065 1308	ZENER DIODE MTZJ3.6B
D4905	407 099 5105	ZENER DIODE MTZJ4.7B
D4913	407 099 6805	ZENER DIODE MTZJ13B
D4915	407 012 4406	DIODE 1SS133
D4916	407 012 4406	DIODE 1SS133
D4917	407 012 4406	DIODE 1SS133
HS401	614 264 5697	HEAT SINK
HS402	614 285 3528	HEAT SINK
IC401	409 294 6109	IC TA2011S
IC402	409 232 1708	IC M51167AFP
IC403	409 189 3404	IC BA7755A
IC404	409 051 2801	IC TC4052BP
or	409 334 7400	IC NJU4052BD
or	409 336 0508	IC BU4052BC
IC405	409 199 4705	IC MC14066BF
or	409 285 8709	IC MC14066BD

REF.NO.	PART NO.	DESCRIPTION
IC406	409 344 3607	IC BH3854AFS
IC407	⚠ 409 313 0705	IC TA8223K
IC409	409 039 7408	IC NJM4558D
IC410	409 346 2301	IC BU2090F
IC411	409 003 0404	IC BA6138
IC413	⚠ 409 316 3000	IC BA3938
IC414	409 384 3506	IC BA3314F
IC415	⚠ 409 145 2809	IC NJM7805FA
L4001	645 006 9864	INDUCTOR,80U
or	614 212 3171	INDUCTOR,FERITE
L4701	645 006 9864	INDUCTOR,80U
or	614 212 3171	INDUCTOR,FERITE
L4801	645 006 9864	INDUCTOR,80U
or	614 212 3171	INDUCTOR,FERITE
L4902	645 017 5282	INDUCTOR,3.3M K
LG401	614 217 7266	LUG 1AV2FX9SD09A-
PR401	⚠ 645 005 9933	PROTECTOR,IC 0.25A 50V
PR402	⚠ 645 006 2360	PROTECTOR,IC 1.0A 50V
PR403	⚠ 645 014 2475	PROTECTOR,0.75A 125V
Q4601	⚠ 405 006 3909	TR 2SA952-K
Q4602	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4603	405 005 1906	TR 2SA733-K
Q4702	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4703	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4704	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4705	405 021 0600	TR 2SD1012-G-SPA
Q4707	405 010 9706	TR 2SC1571-G-NP
Q4711	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
Q4712	405 095 2708	TR 2SJ40-D
Q4713	405 095 2708	TR 2SJ40-D
Q4715	405 020 7204	TR 2SC945A-K
Q4717	405 020 7204	TR 2SC945A-K
Q4720	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4802	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4803	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4804	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4805	405 021 0600	TR 2SD1012-G-SPA
Q4807	405 010 9706	TR 2SC1571-G-NP
Q4811	405 095 2708	TR 2SJ40-D
or	405 095 2807	TR 2SJ40-E
or	405 085 9106	TR 2SJ105-GR
or	405 095 3408	TR 2SJ105-BL
Q4812	405 095 2708	TR 2SJ40-D
Q4813	405 095 2708	TR 2SJ40-D
Q4815	405 020 7204	TR 2SC945A-K
Q4817	405 020 7204	TR 2SC945A-K
Q4820	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4901	⚠ 405 141 3604	TR KTA1273-Y
Q4902	⚠ 405 009 5108	TR 2SB926-T
Q4903	405 075 8102	TR DTA143ZS
Q4904	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4905	405 005 1906	TR 2SA733-K
Q4906	405 020 7204	TR 2SC945A-K
Q4907	405 075 8102	TR DTA143ZS
Q4908	⚠ 405 012 7502	TR 2SC2001-L
Q4909	405 075 8102	TR DTA143ZS

PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
Q4911	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4912	405 013 7204	TR 2SC2274K-E
Q4913	405 013 7204	TR 2SC2274K-E
Q4914	405 013 7204	TR 2SC2274K-E
Q4917	⚠ 405 076 6602	TR 2SB1185-F
Q4918	⚠ 405 012 7502	TR 2SC2001-L
Q4919	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4925	405 005 1906	TR 2SA733-K
Q4928	405 078 3005	TR BA1L4M
or	405 000 6104	TR DTC144ES
Q4929	405 005 1906	TR 2SA733-K
Q4930	405 020 7204	TR 2SC945A-K
Q4931	405 020 7204	TR 2SC945A-K
Q4932	405 020 7204	TR 2SC945A-K
R4772	⚠ 402 071 1304	FUSIBLE RES 2.2 JA 1/4W
R4789	402 072 3406	RESISTOR 0.1 JA 1/2W
R4872	⚠ 402 071 1304	FUSIBLE RES 2.2 JA 1/4W
R4889	402 072 3406	RESISTOR 0.1 JA 1/2W
R4906	⚠ 402 079 4307	RESISTOR 47 J- 1W
R4908	⚠ 402 079 8404	RESISTOR 68 JA 1/2W
RS401	614 256 0686	RESISTOR
SA401	411 021 4005	SCR S-TPG BIN 3X12
SA402	411 021 4005	SCR S-TPG BIN 3X12
SA403	411 021 4005	SCR S-TPG BIN 3X12
SA404	411 023 9800	SCR S-TPG PAN 3X8
SA405	411 023 9800	SCR S-TPG PAN 3X8
SA406	411 023 9800	SCR S-TPG PAN 3X8
SA407	411 023 9800	SCR S-TPG PAN 3X8
T4902	614 255 3442	TRANS,OSC
VR401	645 006 5804	VR,SEMI,2.2K N
VR402	645 006 5804	VR,SEMI,2.2K N

HEADPHONE P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
91	614 298 2471	ASSY,PWB,HEADPHONE (N.S.P)
CN436	645 023 2329	CORD,SOCKET
CN440	614 229 3812	JACK
or	645 013 8621	JACK,PHONE D3.6
CN441	645 005 8110	PLUG,4P,SPEAKER
or	645 007 0075	PLUG,4P,SPEAKER
CN442	614 035 4959	SOCKET,DIP 6P,AMP
or	614 255 4036	SOCKET,6P,AMP
CN443	645 012 2743	SOCKET,DIP 9P,AMP
or	614 249 3847	SOCKET,9P,AMP
CN444	645 005 8110	PLUG,4P,POWER SUPPLY
or	645 007 0075	PLUG,4P,POWER SUPPLY
CN445	645 005 9292	PLUG,5P,JOG SW
or	645 007 0082	PLUG,5P,JOG SW
L4795	645 006 9864	INDUCTOR,80U
or	614 212 3171	INDUCTOR,FERITE
L4895	645 006 9864	INDUCTOR,80U
or	614 212 3171	INDUCTOR,FERITE
Q4795	405 021 0600	TR 2SD1012-G-SPA
Q4895	405 021 0600	TR 2SD1012-G-SPA

ANTENNA TERMINAL P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
92	614 287 4912	ASSY,PWB,EXTANT,ANT (N.S.P)
CN462	645 005 7366	PLUG,2P,SYSCON
or	645 007 0051	PLUG,2P,SYSCON
CN463	645 004 2881	PLUG,2P,TUNER
CN464	645 004 2683	PLUG,2P,AM LOOP ANT
or	645 014 9801	PLUG,2P,AM LOOP ANT
S4620	645 006 9673	SWITCH,PUSH 1P-1T

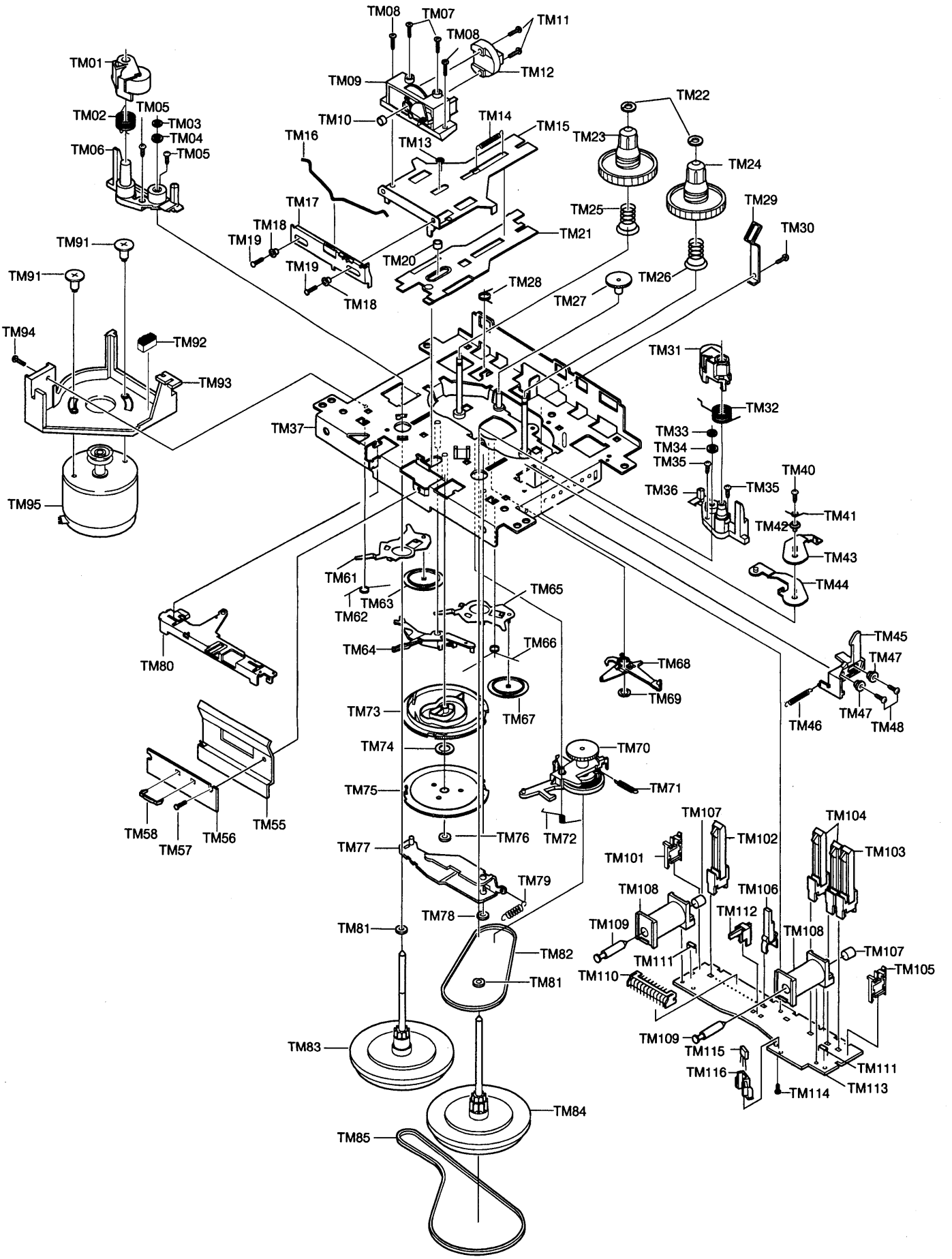
POWER SUPPLY P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
93	614 298 2440	ASSY,PWB,POWER SUPPLY (N.S.P)
BR401	⚠ 645 006 4760	HOLDER,FUSE
BR402	⚠ 645 006 4760	HOLDER,FUSE
BR403	⚠ 645 006 4760	HOLDER,FUSE
BR404	⚠ 645 006 4760	HOLDER,FUSE
CN435	614 299 7604	CORD,4P CONNECTOR
CN453	645 004 2706	PLUG,4P,AMP
or	645 014 9825	PLUG,4P,AMP
CN454	614 035 4935	SOCKET,DIP 4P,HEADPHONE
or	614 237 9776	SOCKET,4P,HEADPHONE
CN455	614 017 6964	TERMINAL BOARD
D4991	⚠ 407 148 6701	DIODE 1A3-I
D4992	⚠ 407 148 6701	DIODE 1A3-I
D4993	⚠ 407 148 6701	DIODE 1A3-I
D4994	⚠ 407 148 6701	DIODE 1A3-I
D4995	⚠ 407 107 6001	DIODE RL203-BD80
D4996	⚠ 407 107 6001	DIODE RL203-BD80
D4997	⚠ 407 107 6001	DIODE RL203-BD80
D4998	⚠ 407 107 6001	DIODE RL203-BD80
D4999	⚠ 407 148 6701	DIODE 1A3-I
L4995	⚠ 645 016 8284	INDUCTOR,180UH
R4995	⚠ 402 071 1304	FUSIBLE RES 2.2 JA 1/4W
S4991	614 226 3631	SWITCH

AC SOCKET P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
94	614 298 2457	ASSY,PWB,AC SOCKET (N.S.P)
CN451	⚠ 614 020 7590	SOCKET
or	⚠ 645 005 7038	SOCKET,INLET AC 2P

EXPLODED VIEW (TAPE MECHANISM)

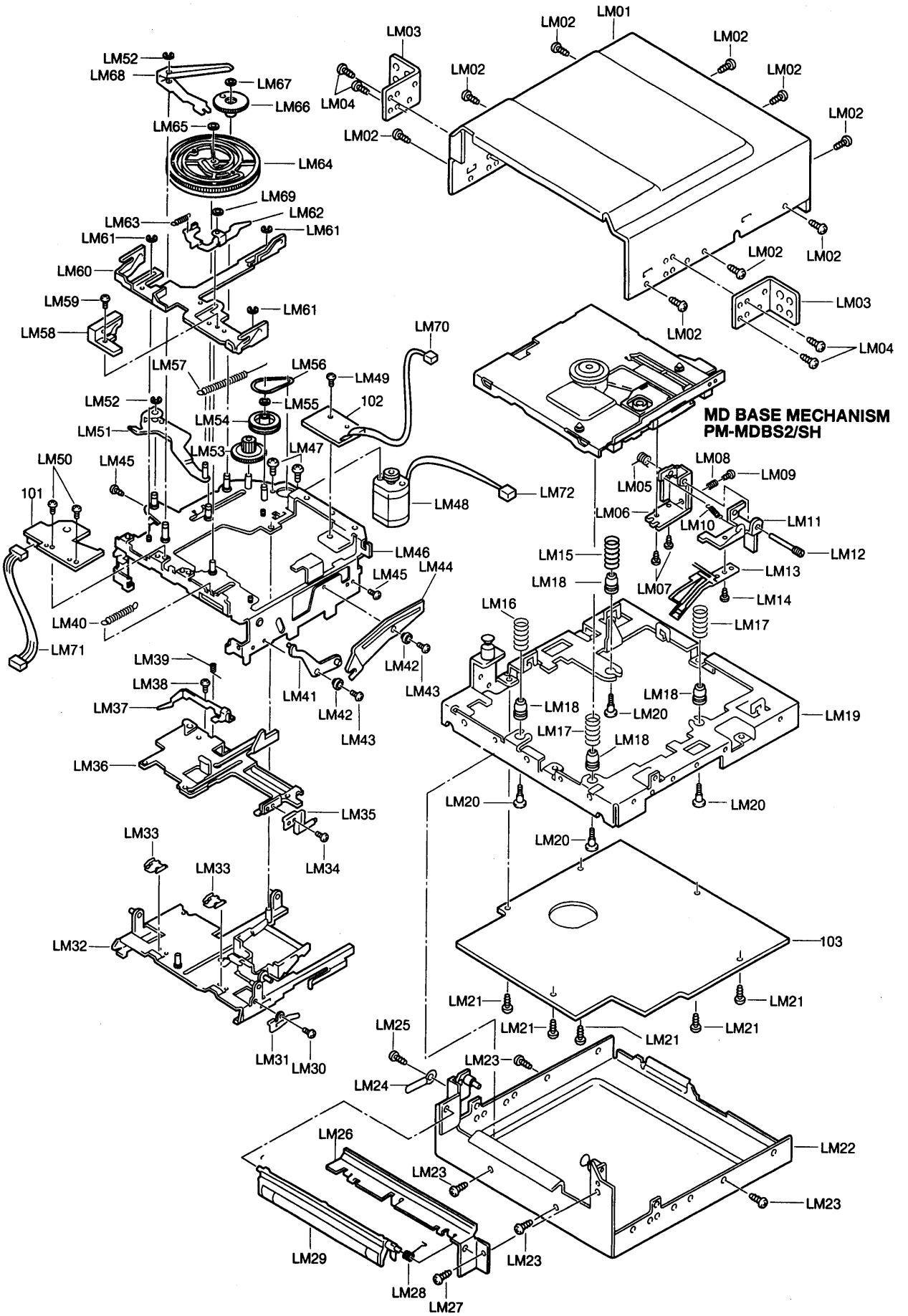


PARTS LIST

TAPE MECHANISM (TM-MD3TN-SH . . . N.S.P)

REF.NO.	PART NO.	DESCRIPTION
TM01	645 012 1531	ASSY,PINCH ROLLER ARM(R)
TM02	645 012 1401	P ARM(R)SPRING
TM03	645 009 7751	NYLON WASHER 2.05X3.5X0.5
TM04	645 009 8031	HL WASHER 1.7X3.5X0.5
TM05	645 012 1906	C TAPP SCREW M2X5
TM06	645 012 1692	ASSY,FL METAL(R)
TM07	645 012 1920	(+)(-)SCREW(SMALL)M2X6
TM08	645 012 1890	TAMS SCREW M2X5
TM09	645 012 1494	ASSY,HEAD BASE
TM10	645 012 1364	SPACER
TM11	645 012 1883	HEAD COLLAR SCREW(S)
TM12	645 028 1211	R/P HEAD
TM13	645 009 7720	CAMERA S TAP SCREW G 2X5
TM14	645 012 1371	RC SPRING
TM15	645 012 1463	HEAD PANEL(A)
TM16	645 012 1517	PINCH ROLLER SPRING
TM17	645 012 1388	CHP LEVER
TM18	645 012 1340	CHP LEVER COLLAR
TM19	645 009 7027	CAMERA TS M SCREW 1.7X3
TM20	645 009 8895	PANEL COLLAR
TM21	645 012 1500	ASSY,HEAD PANEL(B)
TM22	645 009 7072	HL WASHER CUT 1.4X3.1X0.5
TM23	645 012 1623	ASSY,T REEL(R)
TM24	645 012 1616	ASSY,T REEL(F)
TM25	645 012 1593	BT SPRING
TM26	645 012 1609	BT SPRING(F)
TM27	645 012 1555	FF GEAR
TM28	645 012 1470	HEAD PANEL SPRING
TM29	645 012 1449	PACK SPRING
TM30	645 011 1242	C TAPP SCREW M2X3
TM31	645 012 1524	ASSY,PINCH ROLLER ARM(F)
TM32	645 012 1395	P ARM(F)SPRING
TM33	645 009 7744	NYLON WASHER 2.1X3.5X0.5
TM34	645 012 1951	HL WASHER CUT 1.8X4X0.5
TM35	645 012 1906	C TAPP SCREW M2X5
TM36	645 012 1685	ASSY,FL METAL(F)
TM37	645 012 2514	ASSY,CHASSIS
TM40	645 009 7713	CAMERA S TAP SCREW G 2X6
TM41	645 013 8027	E SLIDE SPRING(F)
TM42	645 009 8017	E STOPPER COLLAR
TM43	645 013 8003	E STOPPER(A)
TM44	645 009 7638	E STOPPER B(F)
TM45	645 013 8010	E SLIDE LEVER
TM46	645 013 8089	E SLIDE LEVER SPRING
TM47	645 013 8072	COLLAR
TM48	645 012 1913	S TAMP TAPP SCREW M2X5
TM55	645 012 1487	SHIELD PLATE
TM56	645 009 6907	RELAY BOARD
TM57	645 012 1913	S TAMP TAPP SCREW M2X5
TM58	645 012 1357	WIRE CLAMP
TM61	645 012 1647	ASSY,T GEAR ARM(R)
TM62	645 012 1586	TG ARM(R)SPRING
TM63	645 012 1548	T GEAR
TM64	645 012 1777	M TRIGGER ARM
TM65	645 012 1630	ASSY,T GEAR ARM(F)
TM66	645 012 1579	TG ARM(F)SPRING
TM67	645 012 1548	T GEAR
TM68	645 012 1562	RF TRIGGER ARM
TM69	645 012 1937	HL WASHER CUT 2.1X5X0.4
TM70	645 012 1678	ASSY,RF CLUTCH
TM71	645 012 1654	RF PULLEY ARM SPRING
TM72	645 012 1814	TRIGGER ARM SPRING
TM73	645 012 1760	M GEAR
TM74	645 012 1876	E RING S2.0
TM75	645 012 1791	RF CAM GEAR
TM76	645 012 1944	HLW CUT 1.55X3.5X0.5
TM77	645 012 1784	P KICK LEVER
TM78	645 012 1937	HL WASHER CUT 2.1X5X0.4
TM79	645 012 1432	PK LEVER SPRING
TM80	645 012 1753	CH SLIDE LEVER
TM81	645 009 7768	HL WASHER 2.3X3.8X0.13
TM82	645 012 1661	RF BELT
TM83	645 012 1715	ASSY,FLYWHEEL(R)
TM84	645 012 1708	ASSY,FLYWHEEL(F)
TM85	645 009 6990	MAIN BELT
TM91	645 011 3727	MOTOR COLLER SCREW
TM92	645 012 1333	MAT
TM93	645 012 1722	MOTOR BRACKET
TM94	645 012 1906	C TAPP SCREW M2X5
TM95	645 028 1198	ASSY,MOTOR
TM101	645 012 1845	P BASE STUD
TM102	645 011 1631	LEAF SW MTS-10431MVJ0
TM103	645 011 1631	LEAF SW MTS-10431MVJ0
TM104	645 011 1631	LEAF SW MTS-10431MVJ0
TM105	645 012 1845	P BASE STUD
TM106	645 012 1869	LEAF SW MCV-00511MVD0
TM107	645 012 1425	PLUNGER HOLDER
TM108	645 012 1807	SOLENOID
TM109	645 012 1418	PLUNGER
TM110	645 013 6252	CONNECTOR S11B-PH-K-S
TM111	645 013 6269	DIODE,DSF10C
TM112	645 012 1852	LEAF SW MSW-18211MVD0
TM113	645 012 1821	P BASE
TM114	645 009 2312	C TAP SCREW M2X4
TM115	645 013 6276	HALL IC LB9051A
TM116	645 012 1838	IC PROTECTOR

EXPLODED VIEW (MD LOADING MECHANISM)



MD MECHANISM (MDBL3100/SH) . . . N.S.P

MD LOADING MECHANISM SECTION (MDSL3/SH . . . N.S.P)

REF.NO.	PART NO.	DESCRIPTION
LM01	614 287 1577	SHIELD,TOP,UPPER
LM02	411 028 1908	SCR S-TPG PAN 1.7X3,UPPER SHIELD
LM03	614 277 5493	JOINT,MD UNIT FIXING
LM04	411 028 2905	SCR S-TPG PAN 2X4,JOINT FIXING
LM05	614 277 6315	SPRING,HEAD PUSH DOWN
LM06	614 287 1539	MOUNTING,HEAD,PICK CONT.ANGLE
LM07	411 019 9906	SCR PAN PCS 1.7X3, PICK CONT ANGLE
LM08	614 278 9902	SPRING,HEAD DOWN ADJUST
LM09	411 169 6909	SCR PAN PCS 1.4X4,HEAD ADJUST
LM10	614 277 9118	SPRING,HEAD SIDE PULL
LM11	614 277 5578	LEVER,HEAD FIX
LM12	614 285 4679	SHAFT,HEAD U/D LEVER CENTER
LM13	645 016 1209	HEAD,MD,REC
LM14	411 019 9401	SCR PAN PCS 1.7X2.5,HEAD
LM15	614 277 8302	SPRING,FLOATING C
LM16	614 277 6254	SPRING,FLOATING B
LM17	614 294 8798	SPRING,COMP,FLOATING A
LM18	614 277 5288	DAMPER,FLOATING CUSHION
LM19	614 288 6397	ASSY,CHASSIS FLOATING
LM20	614 277 5929	SPECIAL SCREW-1.2X5.1,FLOATING
LM21	411 170 5304	SCR S-TPG PAN+OTW 2X6,MD PWB
LM22	614 288 6403	ASSY,SHIELD BOTTOM
LM23	411 028 2905	SCR S-TPG PAN 2X4, FLOATING CHASSIS
LM24	614 129 9341	LUG,SW CORD FIXING
LM25	411 019 9906	SCR PAN PCS 1.7X3,LUG FIXING
LM26	614 277 5615	MOUNTING,DOOR BRACKET
LM27	411 019 9906	SCR PAN PCS 1.7X3,DOOR BRACKET
LM28	614 277 6308	SPRING,DOOR CLOSE
LM29	614 277 5295	DOOR,APPERANCE DOOR
LM30	411 169 6800	SCR PAN PCS 1.7X1.5,SPRING
LM31	614 277 5813	SPRING,SHUTTER OPENNER
LM32	614 278 6444	COMPL,HOLDER,PACK HOLDER ASSY
LM33	614 277 5806	SPRING,PACK PRESS FRONT
LM34	411 169 6800	SCR PAN PCS 1.7X1.5,SPRING
LM35	614 277 5820	SPRING,PACK HANDLING
LM36	614 278 6536	ASSY,SLIDE,LOADING
LM37	614 277 5790	SPRING,PACKOPRESS BACK
LM38	411 169 6800	SCR PAN PCS 1.7X1.5,SPRING
LM39	614 277 6292	SPRING,LOCK LEVER PUSH
LM40	614 277 6285	SPRING,HEAD U/D LEVER PULL
LM41	614 278 6475	ASSY,LEVER,DOOR O/C LEVER B
LM42	614 277 5967	PIPE,DOOR O/C LEVER CENTER
LM43	411 019 9906	SCR PAN PCS 1.7X3,PIPE
LM44	614 277 5547	LEVER,DOOR O/C LEVER A
LM45	411 028 1908	SCR S-TPG PAN 1.7X3,BASE MECHA
LM46	614 278 6413	ASSY,CHASSIS,LOADING
LM47	411 038 8904	SCR PAN 2X2,MOTOR FIXING
LM48	645 016 1506	ASSY,MOTOR LOADING
LM49	411 019 9401	SCR PAN PCS 1.7X2.5,HEAD PWB
LM50	411 019 9401	SCR PAN PCS 1.7X2.5,SW PWB
LM51	614 278 6468	ASSY,LEVER,LOADING
LM52	411 015 7609	RING E 1.5,LEVER
LM53	614 277 5394	GEAR,RELAY GEAR B
LM54	614 277 5707	PULLEY GEAR
LM55	412 034 4709	SPECIAL WASHER,GEAR
LM56	614 277 5219	BELT,MAIN BELT
LM57	614 277 6261	SPRING,LOAD IN/OUT
LM58	614 277 5271	CAM,HEAD U/D CAM
LM59	411 019 9906	SCR PAN PCS 1.7X3,CAM
LM60	614 294 6404	ASSY,SLIDE,UP/DOWN
LM61	411 015 7609	RING E 1.5,UP-DOWN SLIDE
LM62	614 277 5509	LEVER,SW LEVER
LM63	614 277 6278	SPRING,SW LEVER PULL
LM64	614 277 5370	GEAR,CAM GEAR
LM65	412 034 4709	SPECIAL WASHER,GEAR
LM66	614 277 5387	GEAR,RELAY GEAR A
LM67	412 034 4709	SPECIAL WASHER,GEAR
LM68	614 278 6451	ASSY,LEVER,U/D DRIVE
LM69	411 015 6800	RING E 1.2,SW LEVER FIXING
LM70	614 284 3482	CORD,2P CONNECTOR,MD HEAD
LM71	614 284 3505	CORD,4P CONNECTOR,MECHA SW
LM72	614 284 3499	CORD,2P CONNECTOR,MOTOR
	645 023 5047	FLEXIBLE FLAT CABLE,20P, SYSCON-MD
	645 029 5850	FLEXIBLE FLAT CABLE,21P, PICKUP TO MD.PWB

MD LOADING MECHANISM SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
101	614 278 5966	ASSY,PWB,MODE SW (N.S.P)
CN555	645 018 2075	PLUG,4P,SW PWB LEAD OUT
S5501	645 018 8596	SWITCH,PUSH 1P-1TX1,EJWCT
S5502	645 018 8596	SWITCH,PUSH 1P-1TX1,HDCADY
S5503	645 018 8596	SWITCH,PUSH 1P-1TX1,LOADING

MD HEAD RELAY P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
102	614 278 5973	ASSY,PWB,MD HEAD RELAY (N.S.P)
CN553	645 011 9644	SOCKET,FPC 6P,HEAD RELAY

MD P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
103	614 295 3518	ASSY,PWB,MD (N.S.P)
B5801	645 019 1039	INDUCTOR,1000 OHM
B5803	645 019 1039	INDUCTOR,1000 OHM
B5811	645 019 1039	INDUCTOR,1000 OHM
B5812	645 019 1039	INDUCTOR,1000 OHM
B5813	645 019 1039	INDUCTOR,1000 OHM
B5814	645 019 1039	INDUCTOR,1000 OHM
C5101	403 275 7406	TA-SOLID 4.7U M 6.3V
C5102	403 286 1707	TA-SOLID 10U M 6.3V
C5103	403 286 1707	TA-SOLID 10U M 6.3V
C5104	403 275 7406	TA-SOLID 4.7U M 6.3V
C5118	403 275 7406	TA-SOLID 4.7U M 6.3V
C5120	403 286 1707	TA-SOLID 10U M 6.3V
C5311	403 154 2508	OS-SOLID 15U M 6.3V
C5358	403 154 2508	OS-SOLID 15U M 6.3V
C5813	403 091 0407	TA-SOLID 1U M 16V
C5814	403 091 0407	TA-SOLID 1U M 16V
C5902	403 275 7406	TA-SOLID 4.7U M 6.3V
C5903	403 311 1603	TA-SOLID 22U M 4V
C5905	403 311 1603	TA-SOLID 22U M 4V
C5915	403 296 8109	TA-SOLID 10U M 10V
CN501	645 026 5358	SOCKET,FPC 21P
CN502	645 023 3760	SOCKET,FPC 8P
CN503	645 005 7366	PLUG,2P
or	614 017 2539	PLUG 1AV4J10AU020N
CN504	645 005 6901	PLUG,SIDE-ZR-SM3 2P
CN505	645 005 6925	PLUG,SIDE-ZR-SM3 4P
CN571	645 022 0364	SOCKET,FPC 20P
D5101	407 149 0807	DIODE 1SS355
D5102	407 149 0807	DIODE 1SS355
D5351	407 010 0707	DIODE SB05-05CP
D5352	407 010 0707	DIODE SB05-05CP
D5501	407 149 0807	DIODE 1SS355
IC511	409 411 8702	IC CXA2523AR
IC521	409 411 6609	IC CXD2652AR
IC522	409 301 5507	IC TC7S08FU
IC523	410 295 4001	IC KM44V1000DT-L6-Z
or	410 295 4100	IC KM44V1000DJ-L6-Z

REF.NO.	PART NO.	DESCRIPTION
or	410 288 9907	IC HM51W4400BLTT-7
or	410 288 9808	IC HM51W4400BTT-7
or	410 264 5909	IC HM51W4400BSL-7-EL
IC531	409 411 6401	IC BH6511FS
IC532	409 371 4301	IC TC74ACT00FS
IC533	409 370 4807	IC BA6289F
IC551	410 308 7807	IC M30600M8-112FP
IC552	409 367 0300	IC RN5VL27AA
IC553	409 424 1202	IC BR24C02F
IC561	409 410 1001	IC UPC2933T
IC568	409 371 4301	IC TC74ACT00FS
IC569	410 298 7900	IC TC74HC4050AFT-EL
IC591	409 411 5008	IC AK4512-VF
L5202	645 004 1983	INDUCTOR,2.7U J
L5204	645 025 6455	FILTER,EMI 270PF
L5205	645 027 4916	FILTER,EMI 470PF
L5301	645 001 4512	INDUCTOR,10U K
L5302	645 001 4512	INDUCTOR,10U K
L5303	645 001 4512	INDUCTOR,10U K
L5305	645 001 5427	INDUCTOR,2.2U M
L5306	645 001 4512	INDUCTOR,10U K
L5307	645 001 4512	INDUCTOR,10U K
L5351	645 001 5427	INDUCTOR,2.2U M
Q5101	405 105 8201	TR 2SB1132-Q
or	405 008 6403	TR 2SB798-DL
Q5102	405 000 1109	TR DTA124EK
Q5103	405 134 5905	TR 2SA1037AK-R
Q5104	405 134 5905	TR 2SA1037AK-R
Q5106	405 000 4100	TR DTC124EK
Q5351	405 125 2005	TR 2SJ284
Q5352	405 110 4106	TR 2SK1848
Q5353	405 110 4106	TR 2SK1848
Q5354	405 125 2005	TR 2SJ284
R5101	401 037 5400	MT-GLAZE 1K JA 1/10W
R5102	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5104	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5105	401 038 6505	MT-GLAZE 47K JA 1/10W
R5106	401 037 5608	MT-GLAZE 10K JA 1/10W
R5107	401 037 8005	MT-GLAZE 15K JA 1/10W
R5108	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R5109	401 038 6604	MT-GLAZE 470K JA 1/10W
R5111	401 037 1105	MT-GLAZE 6.8 JA 1/8W
R5113	401 037 5707	MT-GLAZE 100K JA 1/10W
R5114	401 037 5202	MT-GLAZE 100 JA 1/10W
R5115	401 037 5400	MT-GLAZE 1K JA 1/10W
R5116	401 037 5400	MT-GLAZE 1K JA 1/10W
R5117	401 038 6406	MT-GLAZE 4.7K JA 1/10W
R5118	401 038 6505	MT-GLAZE 47K JA 1/10W
R5119	401 037 5608	MT-GLAZE 10K JA 1/10W
R5120	401 037 5707	MT-GLAZE 100K JA 1/10W
R5121	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R5122	401 037 5608	MT-GLAZE 10K JA 1/10W
R5123	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R5124	401 037 5608	MT-GLAZE 10K JA 1/10W
R5125	401 037 5707	MT-GLAZE 100K JA 1/10W
R5126	401 037 5608	MT-GLAZE 10K JA 1/10W
R5129	401 037 5400	MT-GLAZE 1K JA 1/10W
R5201	401 037 5202	MT-GLAZE 100 JA 1/10W
R5202	401 038 3504	MT-GLAZE 330 JA 1/10W
R5203	401 037 5202	MT-GLAZE 100 JA 1/10W
R5204	401 038 9001	MT-GLAZE 680 JA 1/10W
R5207	401 037 7800	MT-GLAZE 150 JA 1/10W
R5208	401 037 5400	MT-GLAZE 1K JA 1/10W
R5209	401 038 3603	MT-GLAZE 3.3K JA 1/10W
R5210	401 037 5400	MT-GLAZE 1K JA 1/10W
R5211	401 038 9407	MT-GLAZE 680K JA 1/10W
R5212	401 037 5707	MT-GLAZE 100K JA 1/10W
R5213	401 037 5608	MT-GLAZE 10K JA 1/10W
R5214	401 038 3504	MT-GLAZE 330 JA 1/10W
R5216	401 037 5608	MT-GLAZE 10K JA 1/10W
R5218	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R5219	401 038 0701	MT-GLAZE 2.2K JA 1/10W
R5221	401 037 5400	MT-GLAZE 1K JA 1/10W
R5222	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5223	401 037 5400	MT-GLAZE 1K JA 1/10W
R5224	401 037 5400	MT-GLAZE 1K JA 1/10W
R5225	401 037 5806	MT-GLAZE 1M JA 1/10W
R5230	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5301	401 037 5608	MT-GLAZE 10K JA 1/10W
R5354	401 038 1807	MT-GLAZE 27 JA 1/10W
R5355	401 035 7505	MT-GLAZE 15 JA 1/8W
R5356	401 035 6409	MT-GLAZE 12 JA 1/8W
R5357	401 037 5202	MT-GLAZE 100 JA 1/10W
R5358	401 038 1807	MT-GLAZE 27 JA 1/10W
R5359	401 035 6409	MT-GLAZE 12 JA 1/8W
R5361	401 035 7505	MT-GLAZE 15 JA 1/8W
R5362	401 035 6409	MT-GLAZE 12 JA 1/8W
R5363	401 037 5202	MT-GLAZE 100 JA 1/10W
R5364	401 035 6409	MT-GLAZE 12 JA 1/8W
R5365	401 035 7505	MT-GLAZE 15 JA 1/8W
R5366	401 035 7505	MT-GLAZE 15 JA 1/8W
R5370	401 038 6505	MT-GLAZE 47K JA 1/10W
R5371	401 037 9309	MT-GLAZE 18K JA 1/10W
R5372	401 038 0800	MT-GLAZE 22K JA 1/10W
R5373	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R5502	401 037 5707	MT-GLAZE 100K JA 1/10W
R5506	401 037 5608	MT-GLAZE 10K JA 1/10W
R5507	401 037 5608	MT-GLAZE 10K JA 1/10W
R5508	401 038 6505	MT-GLAZE 47K JA 1/10W
R5514	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5516	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5517	401 038 6505	MT-GLAZE 47K JA 1/10W
R5518	401 038 6505	MT-GLAZE 47K JA 1/10W
R5519	401 038 6505	MT-GLAZE 47K JA 1/10W
R5520	401 038 6505	MT-GLAZE 47K JA 1/10W
R5521	401 038 6505	MT-GLAZE 47K JA 1/10W
R5522	401 038 6505	MT-GLAZE 47K JA 1/10W
R5523	401 038 6505	MT-GLAZE 47K JA 1/10W
R5533	401 038 6505	MT-GLAZE 47K JA 1/10W
R5534	401 038 6505	MT-GLAZE 47K JA 1/10W
R5535	401 038 6505	MT-GLAZE 47K JA 1/10W
R5537	401 037 5608	MT-GLAZE 10K JA 1/10W
R5701	401 037 5202	MT-GLAZE 100 JA 1/10W
R5702	401 037 5202	MT-GLAZE 100 JA 1/10W
R5703	401 037 5202	MT-GLAZE 100 JA 1/10W
R5704	401 037 5202	MT-GLAZE 100 JA 1/10W
R5705	401 037 5202	MT-GLAZE 100 JA 1/10W
R5706	401 037 5400	MT-GLAZE 1K JA 1/10W
R5707	401 035 4108	MT-GLAZE 0.000 ZA 1/8W
R5709	401 038 6505	MT-GLAZE 47K JA 1/10W
R5803	401 037 8005	MT-GLAZE 15K JA 1/10W
R5804	401 037 8005	MT-GLAZE 15K JA 1/10W
R5805	401 038 0800	MT-GLAZE 22K JA 1/10W
R5806	401 038 0800	MT-GLAZE 22K JA 1/10W
R5812	401 037 5707	MT-GLAZE 100K JA 1/10W
R5813	401 037 5707	MT-GLAZE 100K JA 1/10W
R5830	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
R5901	401 037 5608	MT-GLAZE 10K JA 1/10W
R5902	401 037 5202	MT-GLAZE 100 JA 1/10W
R5903	401 037 5400	MT-GLAZE 1K JA 1/10W
R5904	401 037 5400	MT-GLAZE 1K JA 1/10W
R5905	401 037 5400	MT-GLAZE 1K JA 1/10W
R5906	401 037 5400	MT-GLAZE 1K JA 1/10W
R5907	401 037 5608	MT-GLAZE 10K JA 1/10W
X5201	645 023 2305	OSC,CRYSTAL 45.1584MHZ
X5501	645 026 5303	OSC,CERAMIC 6.0MHZ

PARTS LIST

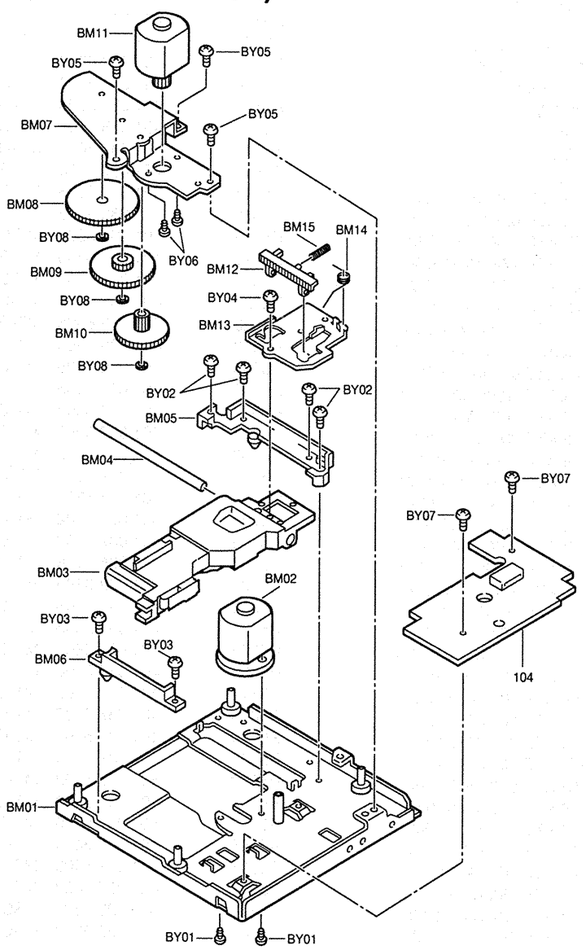
MD BASE MECHANISM SECTION (PM-MDBS2/SH . . . N.S.P)

REF.NO.	PART NO.	DESCRIPTION
BM01	614 296 4767	ASSY,CHASSIS,BASE MECHA
BM02	645 022 9060	ASSY,MOTOR SPINDLE
BM03	645 026 6782	PICKUP,LASER KMS-260A,MD
BM04	614 287 3007	SHAFT,PICKUP RAIL
BM05	614 287 1553	MOUNTING,PICKUP RAIL
BM06	614 294 6411	MOUNTING,PICKUP GUIDE/POSTPIN
BM07	614 287 2772	ASSY,MOUNTING, SLEAD MOTOR/GEAR
BM08	614 287 1447	GEAR,1ST RELAY
BM09	614 287 1454	GEAR,2ND RELAY
BM10	614 287 1461	GEAR,RACK DRIVE
BM11	645 022 9077	ASSY,MOTOR SLEAD
BM12	614 287 1508	LEVER,RACK GEAR
BM13	614 287 1522	MOUNTING,RACK LEVER
BM14	614 287 9290	SPRING,WIRE, RACK/PICKUP GAP CANCEL
BM15	614 287 9283	SPRING,COMP, PUSHING RACK LEVER
	645 023 3791	FLEXIBLE FLAT CABLE,8P, BASE MECHA SWITCH PWB
BY01	411 169 6800	SCR PAN PCS 1.7X1.5, SPINDLE MOTOR
BY02	411 019 9906	SCR PAN PCS 1.7X3,RAIL MOUNTING
BY03	411 019 9906	SCR PAN PCS 1.7X3, MOUNTING POSTPIN
BY04	411 019 9401	SCR PAN PCS 1.7X2.5, MOUNTING RACK
BY05	411 028 1908	SCR S-TPG PAN 1.7X3, MOUNTING SLED
BY06	411 169 6800	SCR PAN PCS 1.7X1.5,SLEAD MOTOR
BY07	411 019 9906	SCR PAN PCS 1.7X3,PWB
BY08	412 051 2702	SPECIAL WASHER,GEARS

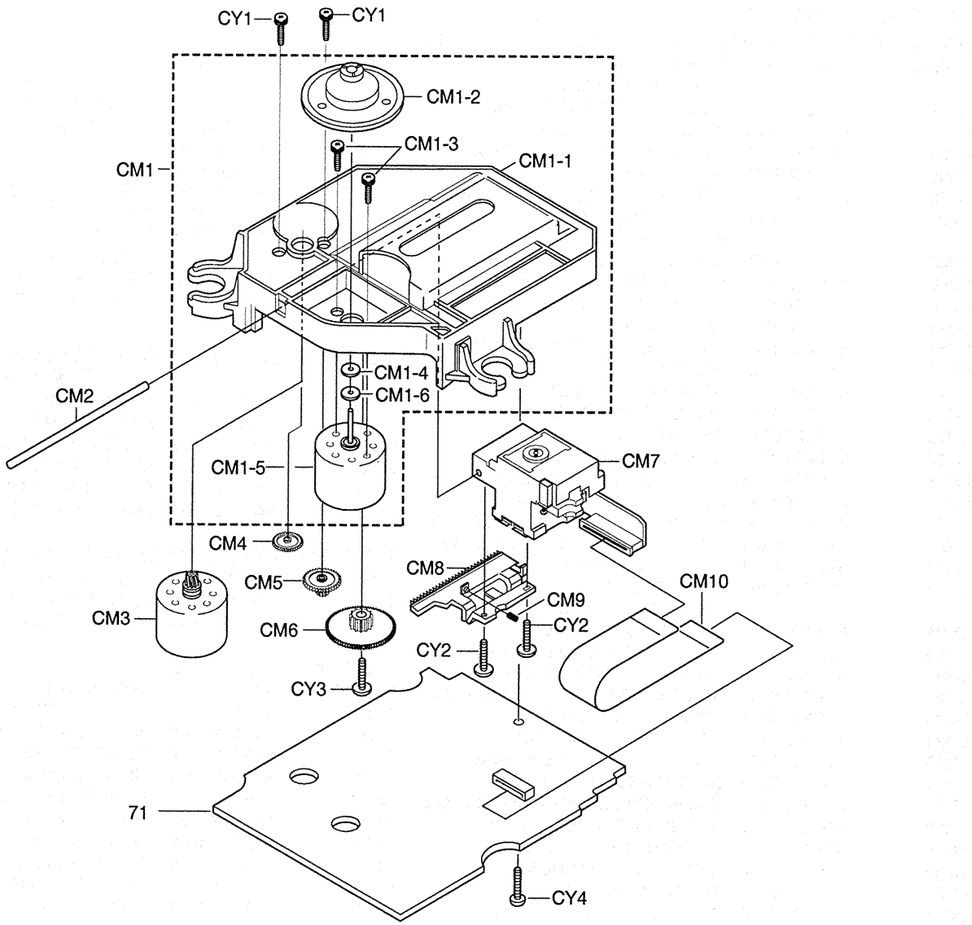
MD BASE MECHANISM SWITCH P.W.BOARD ASSY

REF.NO.	PART NO.	DESCRIPTION
104	614 287 4066	ASSY,PWB,MD MECHA, LIMIT/PACK SW (N.S.P)
CN552	645 023 3760	SOCKET,FPC 8P
S5101	645 023 0868	SWITCH,PUSH 1P-1TX1,PROTECT
S5102	645 023 0851	SWITCH,PUSH 1P-1TX1,REFLECT
S5103	645 023 0844	SWITCH,PUSH 1P-1TX1,PICK UP LIMIT

EXPLODED VIEW (MD BASE MECHANISM)



EXPLODED VIEW (CD MECHANISM)



PARTS LIST

CD MECHANISM (CD94C15-SH . . . N.S.P)

REF.NO.	PART NO.	DESCRIPTION
CM1	614 279 1912	ASSY,CHASSIS,BASE MECHA
CM1-1	614 262 2575	CHASSIS,BASE MECHA
CM1-2	614 263 7739	ASSY,TURNTABLE,SPINDLE
CM1-3	411 044 7502	SCR PAN+SW 2X5,SPINDLE MOTOR
CM1-4	412 032 0208	SPECIAL WASHER, ADHESIVE ESCAPE STOP
CM1-5	645 007 7821	MOTOR,CD-SPINDLE DC 0.2W
CM1-6	412 014 5603	SPECIAL WASHER, TURN TABEL SUPORT
CM2	614 237 7024	SHAFT,PICK UP RAIL
or	614 277 8029	SHAFT,PICK UP RAIL
CM3	645 007 7814	ASSY,MOTOR CD-SLED
CM4	614 237 7093	GEAR,SLED RETARD GEAR 1
CM5	614 237 7109	GEAR,SLED RETARD GEAR 2
CM6	614 237 7116	GEAR,SLED GEAR
CM7	645 006 7983	PICKUP,LASER SF-P100
or	645 018 8879	PICKUP,LASER SF-P100B
CM8	614 262 2599	GEAR,RACK,PICK
CM9	614 238 6934	SPRING,COMP,PICK RACK GEAR
CM10	645 007 8873	FLEXIBLE FLAT CABLE,13P, PICK UP
CY1	411 044 8004	SCR PAN+SW 2X8,SLED MOTOR
CY2	411 152 4301	SCR S-TPG PAN PCS 1.7X6, PICK RACK GEAR
CY3	412 047 3904	SPECIAL SCREW,SLED GEAR
CY4	411 022 8408	SCR S-TPG PAN 2X8,PWB

IC BLOCK DIAGRAM

IC131 CXA1782CQ (Servo Signal Processor)

No.	Name	I/O	Function
1	FEO	O	Focus error amplifier output. Connection internally to the comparator input.
2	FEI	I	Focus error input.
3	FDFCT	I	Capacitor connection pin for detect time constant.
4	FGD	I	Ground this pin through a capacitor when decreasing the focus servo high-frequency gain.
5	FLB	I	External time constant setting pin for increasing the focus servo low frequency.
6	FE_O	O	Focus drive output.
7	FE_M	I	Focus amplifier negative input.
8	SRCH	I	External time constant setting pin for generating focus servo waveform.
9	TGU	I	External time constant setting pin for switching track-ing high frequency gain.
10	TG2	I	External time constant setting pin for switching track-ing high frequency gain.
11	FSET	I	High cut off frequency setting pin for focus and tracking phase compensation amplifier.
12	TA_M	I	Tracking amplifier negative input.
13	TA_O	O	Tracking drive output.
14	SP_P	I	Sled amplifier non-inverted input.
15	SL_M	I	Sled amplifier negative input.
16	SL_O	O	Sled drive output.
17	ISET	I	Setting pin for Focus search, Tracking jump and Sled kick current.
18	VCC	-	+5.0V
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU.
22	XRST	I	Reset input; resets at Low.
23	C.OUT	O	Track number count signal output.
24	SENS	O	Outputs FZC, DFCT, TZC, Gain, BAL, and others according to the command from CPU.
25	FOK	O	Focus OK comparator output.

No.	Name	I/O	Function
26	CC2	O	Input pin for the DEFECT bottom hold output capacitance-coupled.
27	CC1	I	DEFECT bottom hold output.
28	CB	I	Connection pin for DEFECT bottom hold capacitor.
29	CP	I	Connection pin for MIRR hold capacitor. MIRR comparator non-inverted input.
30	RF_I	I	Input pin for the RF summing amplifier output capacitance-coupled.
31	RF_O	O	RF summing amplifier output. Eye pattern check point.
32	RF_M	I	RF summing amplifier inverted input. The RF amplifier gain is determined by the resistance connected between this pin and RFO pin.
33	LD	O	APC(Auto Power Controller) amplifier output.
34	PHD	I	APC(Auto Power Controller) amplifier input.
35	PHD1	I	RF I-V amplifier inverted input. Connect these pins to the photo diodes A + C and B + D pins.
36	PHD2	I	RF I-V amplifier inverted input. Connect these pins to the photo diodes A + C and B + D pins.
37	FE_BIAS	I	Bias adjustment of focus error amplifier.
38	F	I	F I-V and E I-V amplifier inverted input. Connect these pins to the photo diodes F and E.
39	E	I	F I-V and E I-V amplifier inverted input. Connect these pins to the photo diodes F and E.
40	EI	-	I-V amplifier E gain adjustment. (When not using automatic balance adjustment.)
41	VEE	-	Ground
42	TEO	O	Tracking error amplifier output. E-F signal output.
43	LPFI	I	Comparator input for balance adjustment. (Input from TEO through LPF.)
44	TEI	I	Tracking error input.
45	ATSC	I	Window comparator input for ATSC detection.
46	TZC	I	Tracking zero-cross comparator input.
47	TDFCT	I	Capacitor connection pin for defect time constant.
48	VC	O	(VCC + VEE) / 2 DC voltage output.

IC BLOCK DIAGRAM

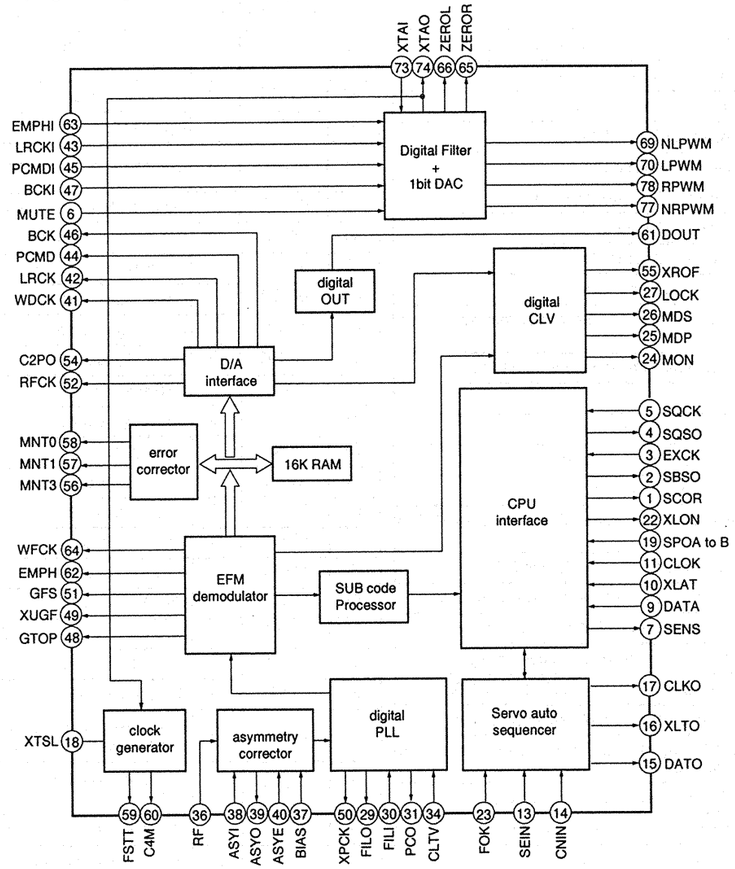
IC142 CXD2508AQ (Digital Signal Processor)

No.	Pin Name	I/O	Function
1	SCOR	O	Turns [H] when sync SO or SI is detected.
2	SBSO	O	Serial output of sub-code P - W.
3	EXCK	I	Clock input for reading SBSO.
4	SQSO	O	Serial output of SUBQ (80-bit).
5	SQCK	I	Clock input for reading SQSO.
6	MUTE	I	[H] at muting, [L] at muting cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset, [L] at resetting.
9	DATA	I	Inputs serial data from CPU.
10	XLAT	I	Latches input from CPU. Serial data latches at falling edge.
11	CLOK	I	Inputs serial data transfer clock from CPU.
12	VSS	-	CND. (0V)
13	SEIN	I	Inputs SENS signal from SSP.
14	CNIN	O	Inputs track jump count signal.
15	DATO	O	Outputs serial data to SSP.
16	XLTO	O	Outputs latches to SSP. Serial data latches at falling edge.
17	CLKO	I	Outputs serial data transfer clock to SSP.
18	SPOA	I	Interface for extension of M. processor (input A).
19	SPOB	I	Interface for extension of M. processor (input B).
20	SPOC	I	Interface for extension of M. processor (input C).
21	XTSL	I	Crystal seiection L : 16.9344MHz, H : 33.8688MHz.
22	XLON	O	Interface for extension of M. processor (output).
23	FOK	I	Focus OK signal input pin. Used servo auto sequencer with SENS output.
24	MON	O	ON/OFF control signal for spindle motor.
25	MDP	O	Servo control signal for spindle motor.
26	MDS	O	Servo control signal for spindle motor.
27	LOCK	O	The output of this pin is [H] when the GFS signal sampled at 460 Hz is [H]. It turns [L] when the GFS signal turns out [L] 8 or more times in succession.
28	TEST	I	Pin for TEST. Normal used stage : GND.
29	FILO	O	Output of filter for master PLL. (Slave = Digital PLL)
30	FILI	I	Inputs to filter for master PLL.
31	PCO	O	Outputs of charge pump for master PLL.
32	VDD	-	Power supply for digital. (+5V)
33	AVSS1	-	Power supply for analog. (0V)
34	CLTV	I	VCO control voltage input for master PLL.
35	AVDD1	-	Power supply for analog. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Inputs constant current for asymmetry correction circuit.
38	ASYI	I	Inputs comparator voltage for asymmetry correction circuit.
39	ASYO	O	EFM fill swing output. ([L] = VSS, [H] = VDD)
40	ASYE	I	[L] : OFF of asymmetly correction. [H] : ON of asymmetly correction.

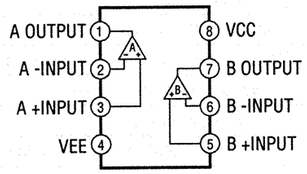
No.	Pin Name	I/O	Function
41	WDCK	O	D/A interface for 48-bit slot. Ward clock (f = 2FS).
42	LRCK	O	D/A interface for 48-bit slot. LR clock (f = FS).
43	LRCKI	I	Inputs LR clock to DAC. (48-bit slot)
44	PCMD	O	D/A interface. Serial data (2'SCOMP, MBS first)
45	PCMDI	I	Inputs audio data to DAC. (48-bit slot)
46	BCK	O	D/A interface. Bit clock.
47	BCKI	I	Inputs bit clock to DAC. (48-bit slot)
48	GTOP	I	GTOP signal output.
49	XUGF	O	XUGF signal output.
50	XPCK	O	XPCK signal output.
51	GFS	O	GFS signal output.
52	RFCK	O	RFCK signal output.
53	VSS	-	GND. (0V)
54	C2PO	O	C2PO signal output.
55	XROF	O	XROF signal output.
56	MNT3	O	MNT3 signal output.
57	MNT1	O	MNT1 signal output.
58	MNT0	O	MNT0 signal output.
59	FSTT	O	2/3 divided output of pins 73 or 74.
60	C4M	O	4.2336 MHz output.
61	DOUT	O	Digital out OUTPUT pin.
62	EMPH	O	Stays [H] for playback disc provided with emphasis or [L] for that without emphasis.
63	EMPHI	I	De-emphasis ON/OFF of DAC. [H] at ON, [L] at OFF.
64	WFCK	O	WFCK(Write Frame Clock) signal output.
65	ZEROL	O	Outputs detection for non-sound data. [H] at detection for non-sound data (L-ch).
66	ZEROR	O	Outputs detection for non-sound data. [H] at detection for non-sound data (R-ch).
67	DTS1	I	Test pin for DAC. Normal used state : [L]
68	VDD	-	Power supply for DAC.
69	NLPWM	O	Outputs PWM for L-ch. (Negative Phase)
70	LPWN	O	Outputs PWM for L-ch. (Positive Phase)
71	AVDD2	-	Power supply for PWM driver.
72	AVDD3	-	Power supply for X'tal.
73	XTAI	I	Inputs X'tal oscillation circuit (33.8688 MHz).
74	XTAO	O	Outputs X'tal oscillation circuit (33.8688 MHz).
75	AVSS3	-	Power supply for X'tal. (GND)
76	AVSS2	-	Power supply for PWM driver.(GND)
77	NRPWM	O	Outputs PWM for R-ch. (Negative Phase)
78	RPWM	O	Outputs PWM for R-ch. (Positive Phase)
79	DST2	I	Test pin for DAC. Normal used state : [L]
80	DST3	I	Test pin for DAC. Normal used state : [L]

IC BLOCK DIAGRAM

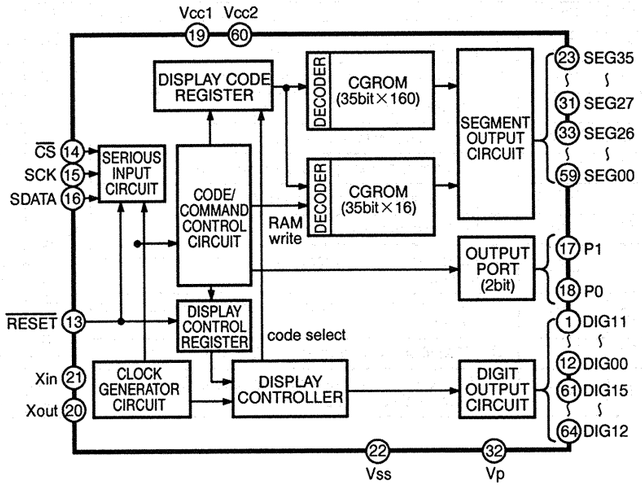
IC142 CXD2508AQ (Digital Signal Processor)



IC143 BA15218F (Buffer Amplifier)



IC152 M66004FP (VFD Controller)



IC BLOCK DIAGRAM

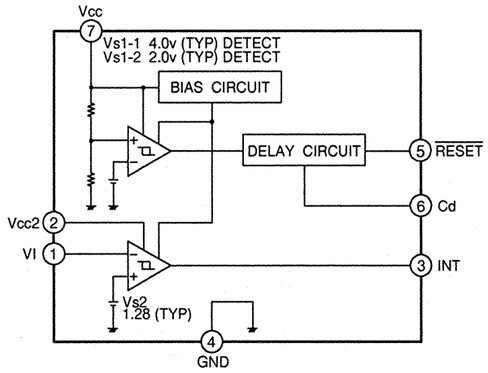
IC151 M38199MF-079FP (Micro Processor)

No.	Name	I/O	Description
1	LEVEL-L	I	LINE L-ch LEVEL input
2	LEVEL-R	I	LINE R-ch LEVEL input
3	AD-PARA0	I	B PACK SW, AMSS input
4	ADLADR0	I	B PLY SW,AMSS input
5	KEY0	I	Key input 13 key
6	KEY1	I	Key input 12 key
7	KEY2	I	Key input 5 key
8	AD-LADR1	I	TU SD,OPEN SW,TU STEREO,LIMIT SW input
9	REEL	I	Reel pulse input
10	PB2/DA	O	GND.
11	D-RESET	O	FL CONTROLLER reset output
12	D-SCK	O	FL CONTROLLER clock output
13	D-SDATA	O	FL CONTROLLER data output
14	FOK	I	FOK detection input
15	JPG1	I	Jog input
16	SCOR	I	SCOR detection input
17	JOG2	I	Jog input
18	SUBQ	I	SUBQ input
19	DSTB	I	MD data strobe input
20	DSCK	O	Clock output for MD data input
21	SDATA	O	MD control data input
22	MDATA	I	MD data input
23	DATA	O	SONY LSI's, command output of PLL IC
24	XLAT	O	Command output of SONY LSI's, PLL IC
25	CLOCK	O	Command output of SONY LSI's, PLL IC
26	SENS	I	SENS input
27	P4		GND.
28	ACK	I	MD data confirm output
29	IR	I	Remote control input
30	DO	I	PLL IC input
31	SCOR	I	SCOR detection input
32	DIST0	I	Destination set up
33	DIST1	I	Destination set up
34	TEIDEN	I	Service interruption detection
35	$\overline{\text{RESET}}$		System reset terminal
36	PB1/XCIN		Sub clock oscillator terminal
37	PB0/TCOUT		Sub clock oscillator terminal
38	XIN		Main clock oscillation ceramic terminal
39	XOUT		Main clock oscillation ceramic terminal
40	VSS		Ground potential thermal
41	SHIFT	O	Micon. clock change
42	HDCADY	I	MD Disc load detection
43	P25		NC
44	VOL-CK	O	Volume IC's clock output
45	VOL-DA	O	Volume IC data signal
46	VOL-ST	O	Volume IC data signal
47	EX-DATA	O	Command output of extend IC (M50253P)
48	EX-CLK	O	Clock output of extend IC (M50253P)
49	DIG15		NC
50	DIG14		NC

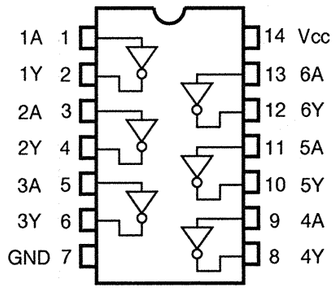
No.	Name	I/O	Description
51	DIG13		NC
52	DIG12		NC
53	DIG11		NC
54	DIG10		NC
55	DIG9		FL digit
56	DIG8		FL digit
57	DIG7		FL digit
58	DIG6		FL digit
59	DIG5		FL digit
60	DIG4		FL digit
61	DIG3		FL digit
62	DIG2		FL digit
63	DIG1		FL digit
64	DIG0		FL digit
65	SEG31		FL segment
66	SEG30		FL segment
67	SEG29		FL segment
68	SEG28		FL segment
69	SEG27		FL segment
70	SEG26		FL segment
71	SEG25		FL segment
72	SEG24		FL segment
73	SEG23		FL segment
74	SEG22		FL segment
75	SEG21		FL segment
76	SEG20		FL segment
77	SEG19		FL segment
78	SEG18		FL segment
79	SEG17		FL segment
80	SEG16		FL segment
81	SEG15	O	PLAY PLUNGER output (ON="H")
82	SEG14	O	FF/REW PLUNGER output (ON="H")
83	SEG13	O	Power control (ON="H")
84	SEG12	O	Analogue audio mute output (ON="H")
85	SEG11	O	Mute control signal for Driver IC (ON="L")
86	SEG10	O	Power control signal for DSP (ON="H")
87	SEG9	O	CD voice muting (ON="H")
88	SEG8	O	Hi speed dubbing LED (ON="L")
89	SEG7	O	Tuner power signal (ON="L")
90	SEG6	O	Tuner mute signal (ON="L")
91	VCC		+B TERMINAL
92	SEG5	O	Normal speed dubbing LED (ON="L")
93	SEG4	O	MD dubbing LED (ON="L")
94	SEG3	O	FL controller chip select output (Select="I")
95	SEG2	O	MD power control (ON="H")
96	SEG1	O	Syncro dubbing LED (ON="L")
97	SEG0		NC
98	VEE		FL drive power
99	AVSS		A/D ground potential terminal
100	VREF		A/D standard potential terminal

IC BLOCK DIAGRAM

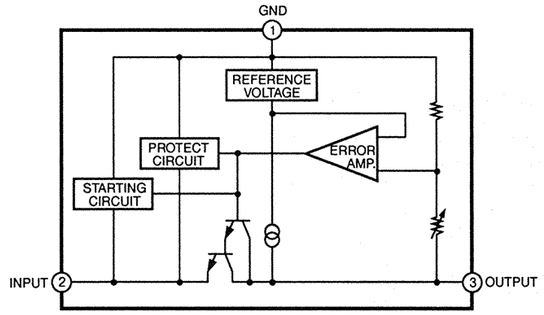
IC153 M62009FP (Malfunction Protection)



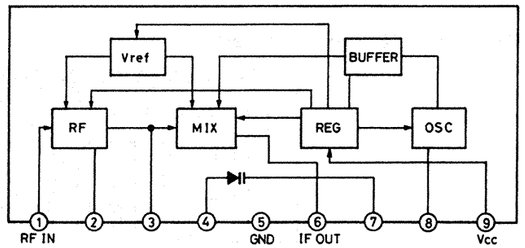
IC154 TC74VHC04F (Hex Inverter)



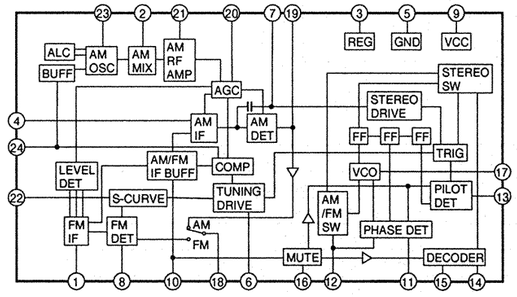
IC155 M5278L56 (3-Terminal Voltage Regulator)



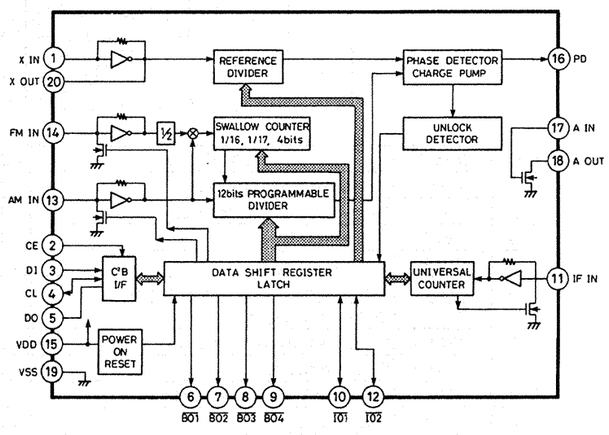
IC201 LA1186N (FM Front End)



IC211 LA1832ML (Tuner System)



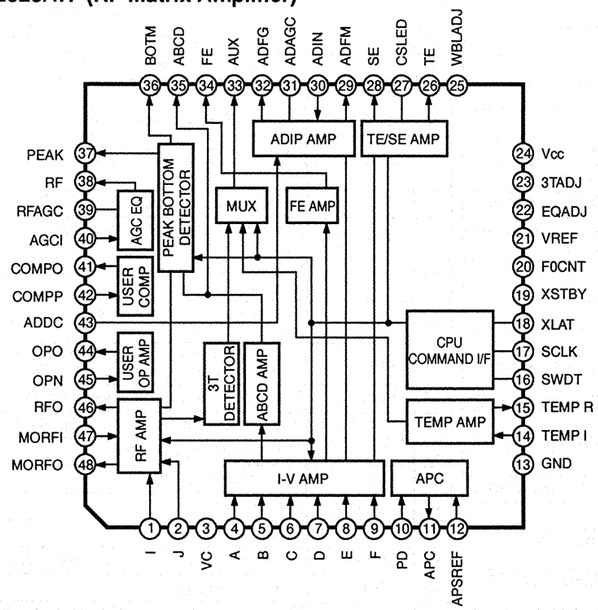
IC221 LC7213MD (PLL Frequency Synthesizer)



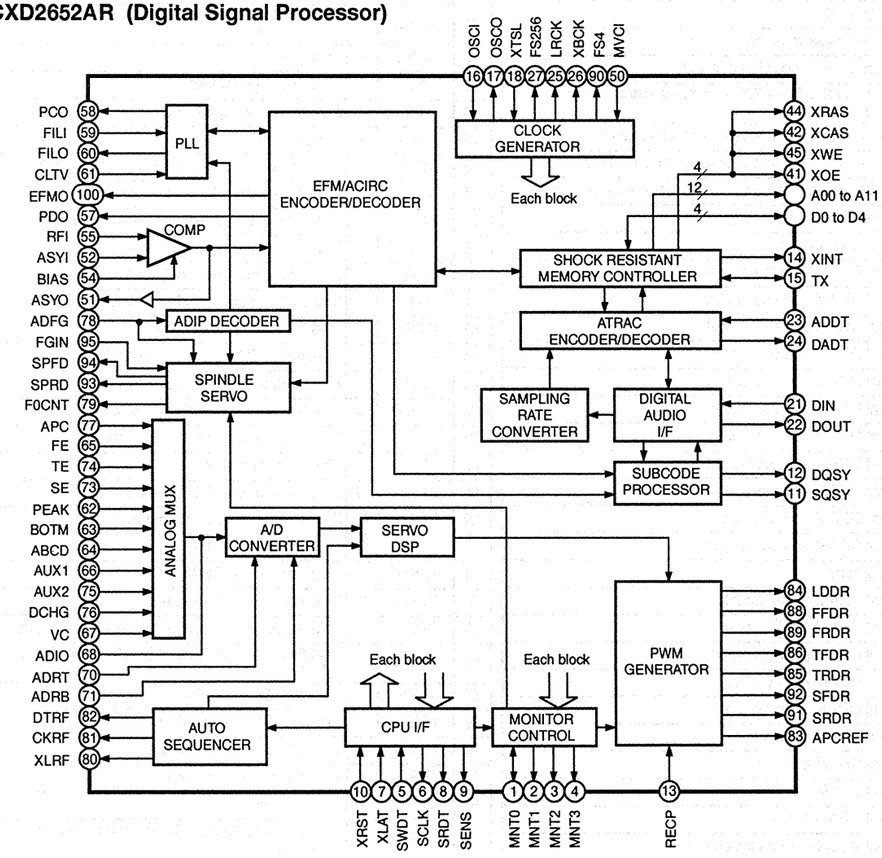
* NOTE : IC block diagrams of Amplifier section are mentioned in Block diagram (Amplifier, Page 80).

IC BLOCK DIAGRAM

IC511 CXA2523AR (RF Matrix Amplifier)



IC521 CXD2652AR (Digital Signal Processor)



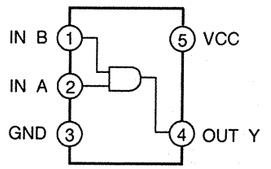
IC BLOCK DIAGRAM

IC521 CXD2652AR (Digital Signal Processor)

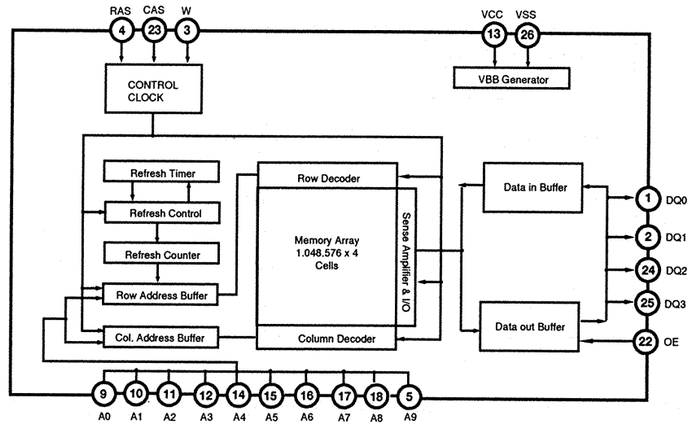
No.	Name	I/O	Description
1	MNT0	I/O	Monitor output
2	MNT1	O	Monitor output
3	MNT2	O	Monitor output
4	MNT3	O	Monitor output
5	SWDT	I	Data input for microcomputer serial interface
6	SCLK	I	Shift clock input for microcomputer serial interface
7	X_AT	I	Latch input for microcomputer serial interface. Latched at the falling edge
8	SRDT	O	Data output for microcomputer serial interface
9	SENS	O	Outputs the internal status corresponding to the microcomputer serial interface address
10	XRST	I	Reset input, Low: reset
11	SQSY	O	Disc subcode Q sync/ADIP sync output
12	DQSY	O	Subcode Q sync output in U-bit CD or MD formal when digital source is CD or MD
13	RECP	I	Laser power switching input. High: recording power Low: playback power
14	XINT	O	Interruption request output. Low when the interruption status occurs
15	TX	I	Enable signal input for recording data output High: enabled
16	OSCI	I	Crystal oscillation circuit input
17	OSCO	O	Crystal oscillation circuit output (inverted output of the OSCI pin)
18	XTSL	I	OSCI Input frequency switching High: 512Fs(22.5792MHz) Low:1024Fs(45.1584MHz)
19	NC	-	Not connected
20	DVss	-	Digital ground
21	DIN	I	Digital audio interface signal input
22	DOUT	O	Digital audio interface signal output
23	ADDT	I	Analog recording input (Connect to the external A/D converter output)
24	DADT	O	REC monitor output/decoded audio data output
25	LRCK	O	LRCK (44.1kHz) output to the external audio block
26	XBCK	O	Bi clock (2.8224MHz) output to the external audio block
27	FS256	O	256Fs output (11.2896MHz)
28	DVDD	-	Digital power supply
29	A03	O	External DRAM address output
30	A02	O	External DRAM address output
31	A01	O	External DRAM address output
32	A00	O	External DRAM address output
33	A10	O	External DRAM address output
34	A04	O	External DRAM address output
35	A05	O	External DRAM address output
36	A06	O	External DRAM address output
37	A07	O	External DRAM address output
38	A08	O	External DRAM address output
39	A11	O	External DRAM address output
40	DVss	-	Digital ground
41	XOE	O	External DRAM output enable
42	XCAS	O	External DRAM $\overline{CAS}$ output
43	A09	O	External DRAM address output
44	XRAS	O	External DRAM $\overline{RAS}$ output
45	XWE	O	External DRAM write enable
46	D1	I/O	External DRAM data bus
47	D0	I/O	External DRAM data bus
48	D2	I/O	External DRAM data bus
49	D3	I/O	External DRAM data bus
50	MVCI	I	External VCO (784Fs) clock input
51	ASYO	O	Playback EFM full-swing output (Low: Vss ; High:VDD)
52	ASYI	I	Playback EFM comparator slice voltage input
53	AVDD	-	Analog power supply
54	BIAS	I	Playback EFM comparator bias current input
55	RFI	I	Playback EFM RF signal input
56	AVss	-	Analog ground
57	PDO	O	Phase comparison output for analog PLL of EFM decoder
58	PCO	O	Phase comparison output for master PLL of playback digital PLL and recording EFM PLL
59	FILI	I	Filter input for master PLL of playback digital PLL and recording EFM PLL
60	FILO	O	Filter output for master PLL of playback digital PLL and recording EFM PLL
61	CLTV	I	Internal VCO control voltage input for master PLL of playback digital PLL and recording EFM PLL
62	PEAK	I	Peak hold signal input for quantify of light
63	BOTM	I	Bottom hold signal input for quantify of light
64	ABCD	I	Signal input for quantify of light
65	FE	I	Focus error signal input
66	AUX1	I	Auxiliary input 1
67	VC	I	Center voltage input
68	ADO	O	Monitor output for A/D converter input signal
69	AVDD	-	Analog power supply
70	ADRT	I	Voltage input for the upper limit of the A/D converter operating range
71	ADRB	I	Voltage input for the lower limit of the A/D converter operating range
72	AVss	-	Analog ground
73	SE	I	Sled error signal input
74	TE	I	Tracking error signal input
75	AUX2	I	Auxiliary input 2
76	DCHG	I	Connect to the low-impedance power supply
77	APC	I	Error signal input for laser digital APC
78	ADFG	I	ADIP binary FM signal (22.05+-1kHz) input
79	FOCNT	O	CXA2523 current source setting output
80	XLRF	O	CXA2523 control latch output. Latched at the falling edge
81	CKRF	O	CXA2523 control shift clock output
82	DTRF	O	CXA2523 control data output
83	APCREF	O	Reference PWM output for laser APC
84	LDOR	O	PWM output for laser digital APC
85	TRDR	O	Tracking servo drive PWM output (-)
86	TFDR	O	Tracking servo drive PWM output (+)
87	DVDD	-	Digital power supply
88	FFDR	O	Focus servo drive PWM output (+)
89	FRDR	O	Focus servo drive PWM output (-)
90	FS4	O	4FS output (176.4kHz)
91	SRDR	O	Sled servo drive PWM output (-)
92	SFDR	O	Sled servo drive PWM output (+)
93	SPRD	O	Spindle servo drive output (PWM (-) or polarity)
94	SPFD	O	Spindle servo drive output (PWM (+) or PWM absolute value)
95	FGIN	I	Spindle CAV servo FG input
96	TEST1	I	Test pin. Connect to GND.
97	TEST2	I	Test pin. Connect to GND.
98	TEST3	I	Test pin. Connect to GND.
99	DVss	-	Digital ground
100	EFMO	O	Low when playback, EFM (Encoded data) output when recording

IC BLOCK DIAGRAM

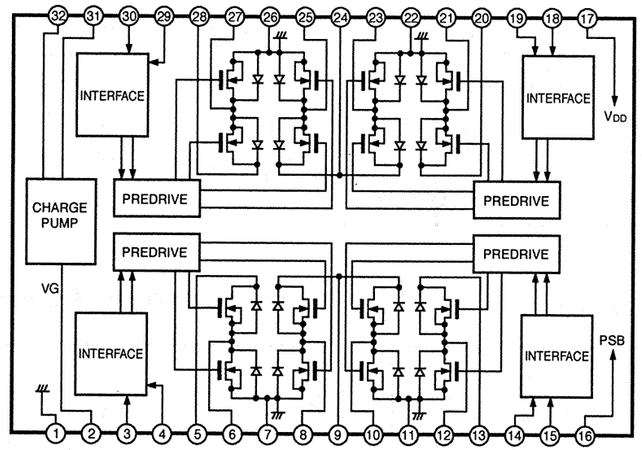
IC522 TC7S08FU (APCREF LPF)



IC523 KM44V1000DT-L6 (4M DRAM)



IC531 BH6511FS (Power Driver)



NO.	NAME	DESCRIPTION	NO.	NAME	DESCRIPTION
1	GND	Pre section ground terminal	17	VDD	Pre section power source terminal
2	VG	Gate voltage supplier terminal	18	IN1R	CH1 reverse input
3	IN4R	CH4 reverse input	19	IN1F	CH1 forward input
4	IN4F	CH4 forward input	20	VM1	Power section ground terminal
5	VM4	Power section power source terminal	21	OUT1F	CH1 forward output
6	OUT4F	CH4 forward output	22	PGND1	Power section ground terminal
7	PGND4	Power section ground terminal	23	OUT1R	CH1 reverse output
8	OUT4R	CH4 reverse output	24	VM12	Power section ground terminal
9	VM34	Power section power source terminal	25	OUT2R	CH2 reverse output
10	OUT3R	CH3 reverse output	26	PGND2	Power section ground terminal
11	PGND3	Power section ground terminal	27	OUT2F	CH2 forward output
12	OUT3F	CH3 forward input	28	VM2	Power section power source terminal
13	VM3	Power section power source terminal	29	IN2F	CH2 forward input
14	IN3F	CH3 forward input	30	IN2R	CH2 reverse input
15	IN3R	CH3 reverse input	31	CAPA+	Charge pump condenser connect terminal +
16	PSB	Power cut terminal	32	CAPA-	Charge pump condenser connect terminal -

IC BLOCK DIAGRAM

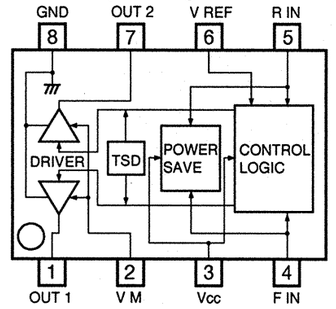
IC551 M30600M8-112FP (MIcro Processor)

No.	Name	I/O	Description
1	ANEX1	O	NC
2	HI-DUB	O	NC
3	POWER	O	Power ON=H, Stand by=L
4	DRVSAVE	O	
5	A-MUTE	O	Audio mute=LOW
6	DA-RST	O	AD/DA IC reset
7	LD-ON	O	Laser ON=H
8	BYTE	I	Outside data bass width set up
9	CNVss	I	Outside ROM=H, Inside ROM=L
10	MODON	O	High frequency fold ON/OFF ON=H
11	WR-PWR	O	Laser power change REC=H
12	RESET	I	Hard ware reset
13	XOUT	O	6MHz Ceramic lock
14	GND		GND.
15	XIN	I	6MHz Ceramic lock
16	Vcc		3.3V
17	NM1	I	3.3V
18	XINT	INT	Interrupt from CDX2652AR
19	DQSY	INT	UBITCD or MD SUB Q sink interrupt
20	SQSY	INT	ADIP, SUB Q sink interrupt
21	SCTX	O	CXD2625AR data write, magnet head ON/OFF
22	DIG-RES	O	XRST signal
23	SENS	I	SENS input
24	XLATCH	O	XLAT data latch
25	MNT3	I	CXD2652AR monitor signal
26	MNT2	I	CXD2652AR monitor signal
27	MNT1	I	CXD2652AR monitor signal
28	MNT0	I	CXD2652AR monitor signal
29	E2P-SDA	I/O	SDA EEPROM data
30	EP2-SCL	O	SCL EEPROM Clock
31	SWDT	O	CXD2652AR serial data output
32	SRDR	I	CXD2652AR serial data input
33	SCLK	O	CXD2652AR serial clock
34	SYS-ACK	O	Syscon serial acknowledge
35	SYS-DTO	O	Syscon serial data output
36	SYS-DTI	I	Syscon serial data input
37	SYS-CLK	I	Syscon serial clock input
38	SYS-STB	I	Syscon serial strobe input
39	RDY	I	R throw VDD connect
40	ALE	O	NC
41	HOLD	O	R throw VDD connect
42	HLDA	O	NC
43	BCLK	O	NC
44	EXROM-RD	O	RD for external ROM
45	BHE	O	NC
46	EXROM-WR	O	WR for external ROM
47	CS3	O	NC
48	CS2	O	NC
49	PWB-CHK	I	PWB test mode detector(L)
50	EXROM	O	Outside ROM chip select

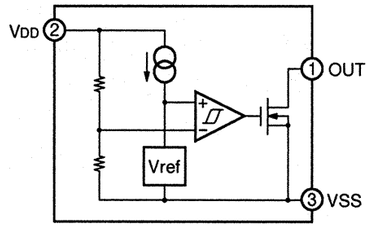
No.	Name	I/O	Description
51	P43/A19	O	NC
52	P42/A18	O	NC
53	P41/A17	O	NC
54	MONO-CONT	O	Monaural double speed playback control
55	EXROM-A15	O	Outside ROM address bath
56	EXROM-A14	O	Outside ROM address bath
57	EXROM-A13	O	Outside ROM address bath
58	EXROM-A12	O	Outside ROM address bath
59	EXROM-A11	O	Outside ROM address bath
60	EXROM-A10	O	Outside ROM address bath
61	EXROM-A09	O	Outside ROM address bath
62	Vcc		3.3V
63	EXROM-A08	O	Outside ROM address bath
64	GND		GND
65	EXROM-A07	O	Outside ROM address bath
66	EXROM-A06	O	Outside ROM address bath
67	EXROM-A05	O	Outside ROM address bath
68	EXROM-A04	O	Outside ROM address bath
69	EXROM-A03	O	Outside ROM address bath
70	EXROM-A02	O	Outside ROM address bath
71	EXROM-A01	O	Outside ROM address bath
72	EXROM-A00	O	Outside ROM address bath
73	P17/D15	O	NC
74	P16/D14	O	NC
75	P15/D13	O	NC
76	P14/D12	O	NC
77	P13/D11	O	NC
78	P12/D10	O	NC
79	P11/D9	O	NC
80	P10/D8	O	NC
81	EXROM-D07	I	Outside ROM data bath
82	EXROM-D06	I	Outside ROM data bath
83	EXROM-D05	I	Outside ROM data bath
84	EXROM-D04	I	Outside ROM data bath
85	EXROM-D03	I	Outside ROM data bath
86	EXROM-D02	I	Outside ROM data bath
87	EXROM-D01	I	Outside ROM data bath
88	EXROM-D00	I	Outside ROM data bath
89	REFLECT	I	Reflection factor Hi:Low, Lo:High
90	PROTECT	I	Miss recording Hi:Recording prihibit
91	LIMTIN	I	Limit switch Lo:on, Hi:off
92	EJECT	I	Eject switch Lo:eject finish
93	LOADING	I	Loading switch Lo:loading finish
94	HDCADY/PA	I	Head down detect/Disk IN detect Lo:detect
95	KIN	3ST	Loading control out=h, in=1, brake=h
96	GND		GND
97	LOAD	3ST	Loading control out=1, in=h, brake=h
98	VREF		3.3V, Vcc connect
99	AVCC		3.3V, Vcc connect
100	EMP	O	emphasis control Hi:off, Lo:on

IC BLOCK DIAGRAM

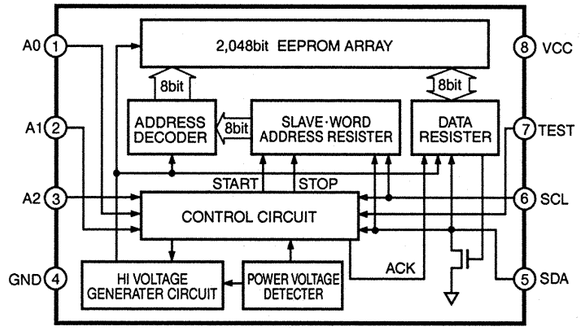
IC533 BA6289F (Loading Motor Driver)



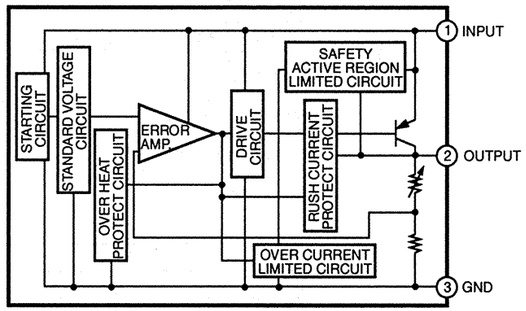
IC552 RN5VL27AA (3-Terminal Power Regulator)



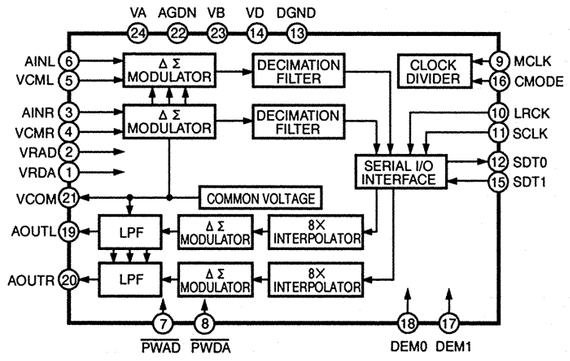
IC553 BR24C02F (EEPROM)



IC561 UPC2933T (Regulator)



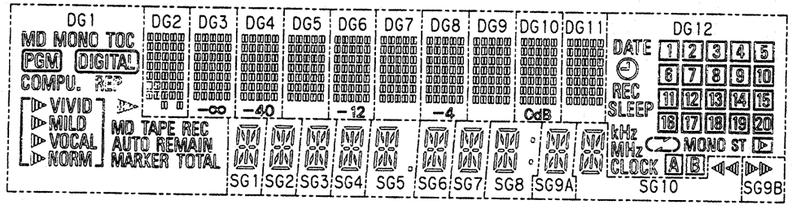
IC591 AK4512-VF (AD/DA Converter)

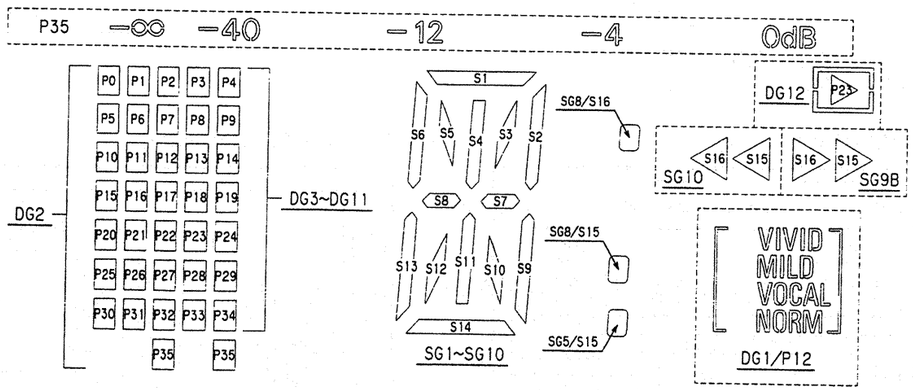


No.	Name	I/O	Description
1	VRDA	I	Voltage reference input pin for DAC, VA
2	VRAD	I	Voltage reference input pin for ADC, VA
3	AINR	I	R-ch analog input pin
4	VCMR	O	R-ch common voltage output pin, VA/2 Connect a electrical capacitor 4.7uF and Ceramic capacitor 0.1uF between AGND.
5	VCML	O	L-ch common voltage output pin, VA/2 Connect a electrical capacitor 4.7uF and Ceramic capacitor 0.1uF between AGND.
6	AINL	I	L-ch analog input pin
7	$\overline{\text{PWAD}}$	I	ADC power down mode pin "L" :Power down
8	$\overline{\text{PWDA}}$	I	DAC power down mode pin "L" :Power down
9	MCLK	I	MASTER CLOCK INPUT PIN
10	LRCK	I	Input/output channel clock pin
11	SCLK	I	Audio serial data clock pin
12	SDTO	O	Audio serial data output pin
13	DGND	-	Digital ground pin
14	VD	-	Digital power supply pin
15	SDTI	I	Audio serial data input pin
16	CMODE	I	Master clock select pin "H" :384ts, "L" :256fs
17	DEM1	I	De-emphasis frequency select pin
18	DEM0	I	De-emphasis frequency select pin
19	AOUTL	O	L-ch analog output pin
20	AOUTR	O	R-ch analog output pin
21	VCOM	O	Common voltage output pin, VA/2 Connect a electrical capacitor 4.7uF and Ceramic capacitor 0.1uF between AGND.
22	AGND	-	Analog ground pin
23	VB	-	Substrate pin
24	VA	-	Analog power supply pin

FL DISPLAY

ANODE & GRID ASSIGNMENT





	DG1	DG12
P0	TOC	1
P1	MONO	2
P2	MD	3
P3	PGM	4
P4	DIGITAL	5
P5	COMPU.	6
P6	REP	7
P7		8
P8	▷(VIVID)	9
P9	▷(MILD)	10
P10	▷(VOCAL)	11
P11	▷(NORM)	12
P12	[≡	13
P13	▷	14
P14	MD	15

	DG1	DG12
P15	MARKER	16
P16	AUTO	17
P17	TOTAL	18
P18	REMAIN	19
P19	REC	20
P20	TAPE	DATE
P21		
P22		REC
P23		▷
P24		
P25		☾
P26		☽
P27		
P28		MONO
P29		ST

	DG1	DG12
P30		SLEEP
P31		kHz
P32		MHz
P33		A
P34		B
P35		CLOCK

PIN ASSIGNMENT

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Assignment	F1	F1	F1	NP	IC	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16

Pin No.	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Assignment	H	SG1	SG2	SG3	SG4	SG5	SG6	SG7	SG8	SG9A	SG10	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL

Pin No.	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61
Assignment	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	SG9B	D	NP	F2	F2	F2

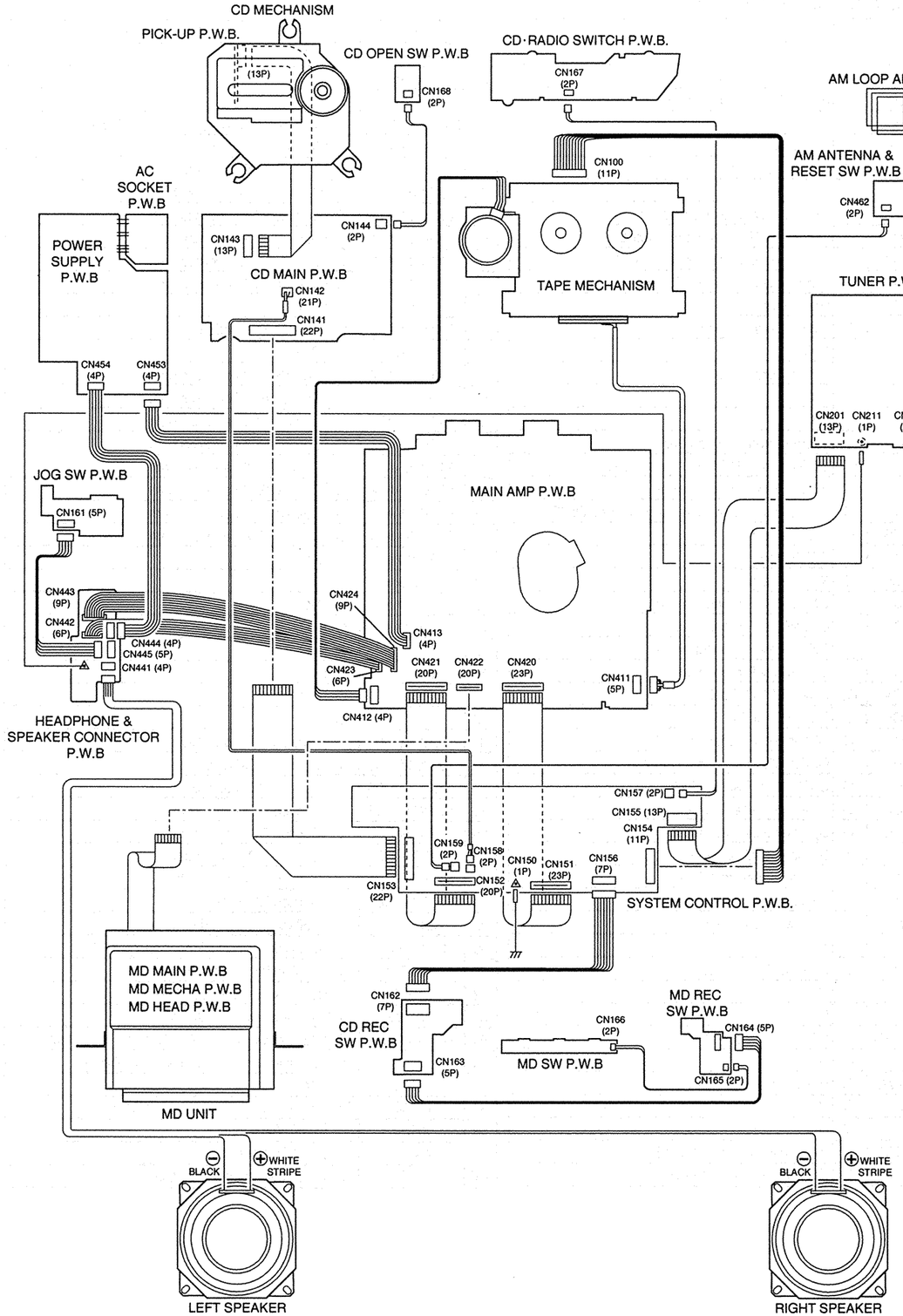
Pin No.	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
Assignment	F2	F2	F2	NP	P35	P34	P33	P32	P31	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	P20	P19

Pin No.	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103
Assignment	P18	P17	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	P0	NP	NP

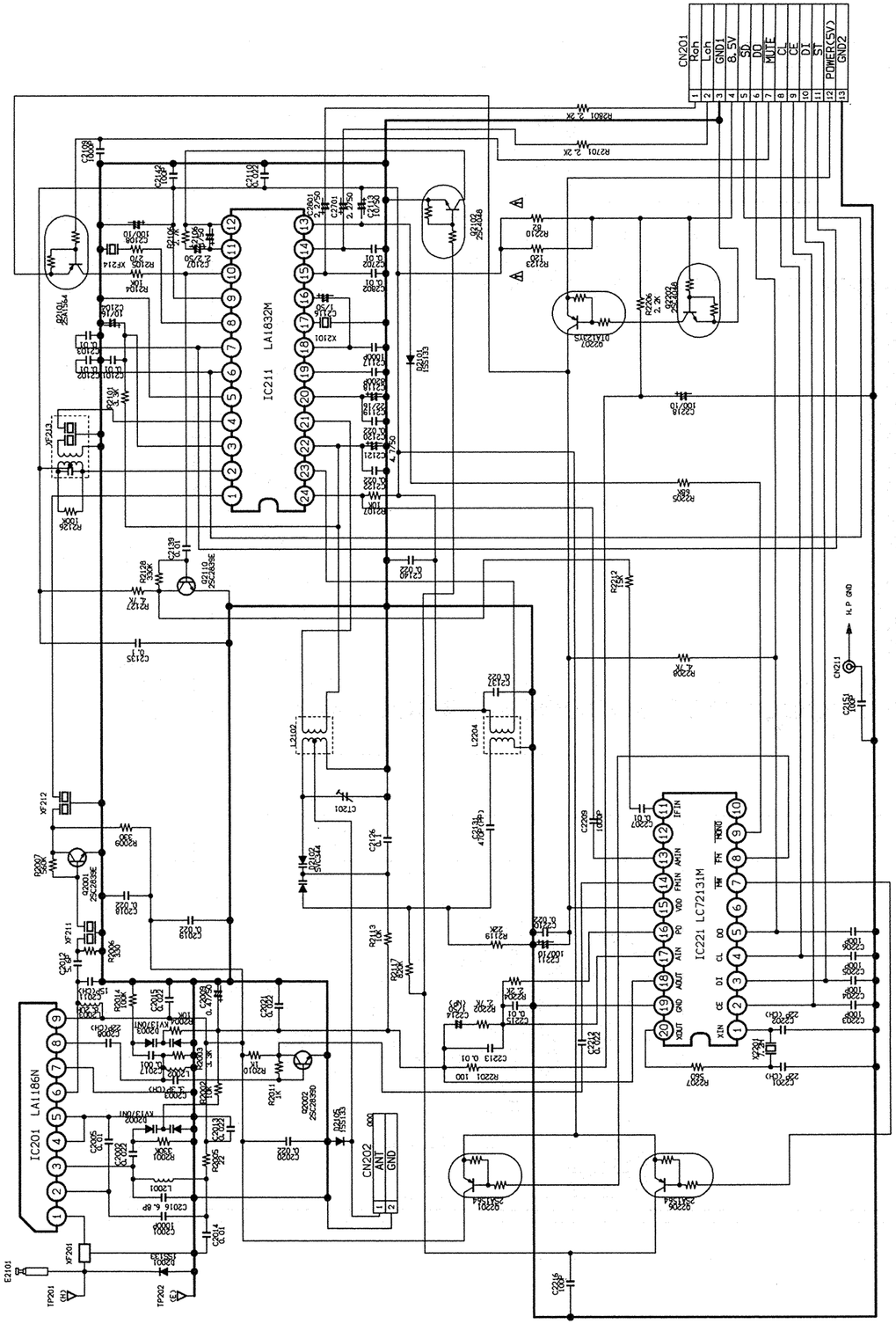
Pin No.	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122
Assignment	DG12	DG11	DG10	DG9	DG8	DG7	DG6	NP	NP	DG5	DG4	DG3	DG2	DG1	IC	NP	F1	F1	F1

F1,F2:Filament DG1~DG12,SG1~SG10:Grid S1~S16,P0~P35:Anode NP:No Pin NL:No Lead

WIRING CONNECTION

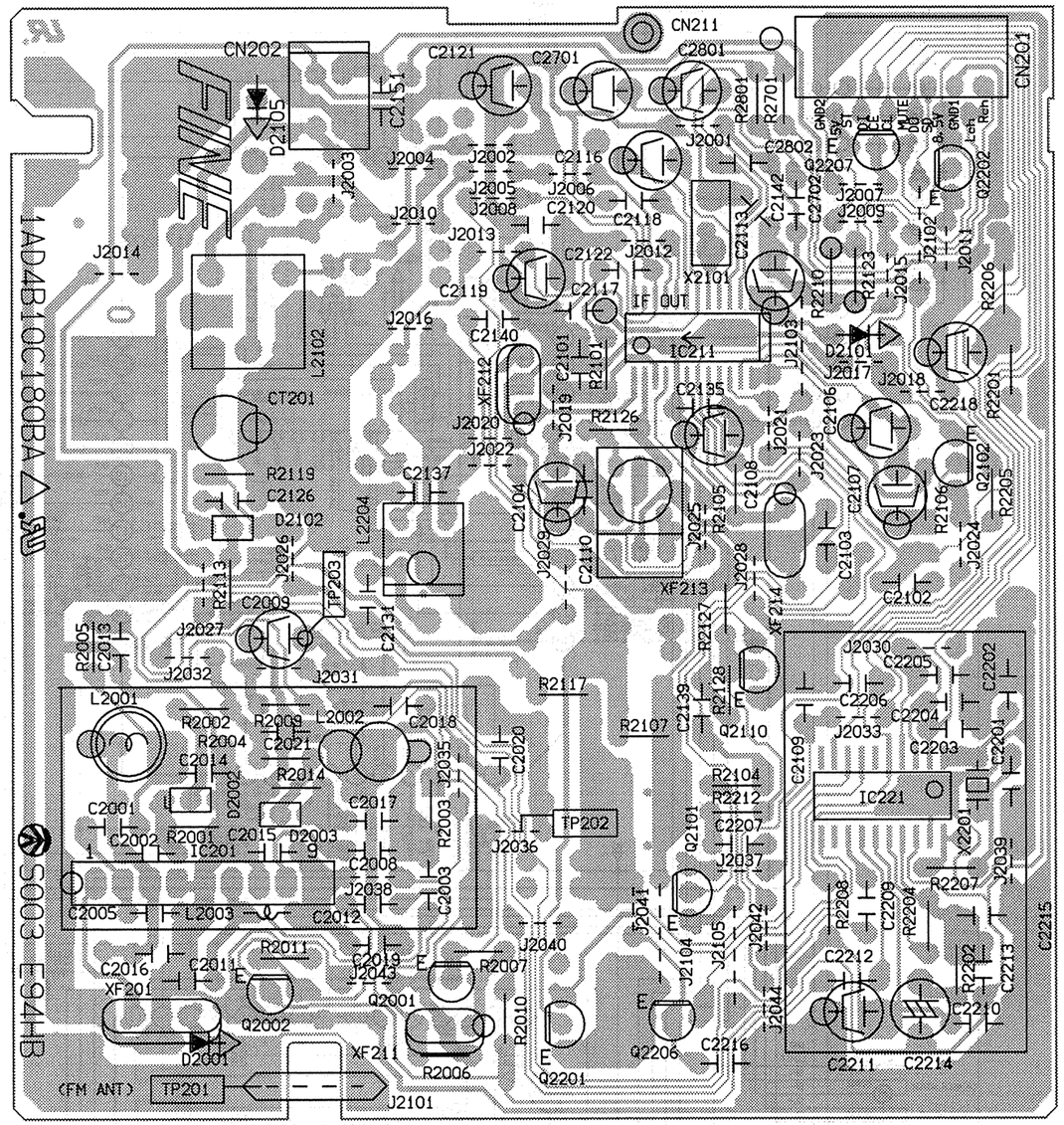


SCHEMATIC DIAGRAM (TUNER)



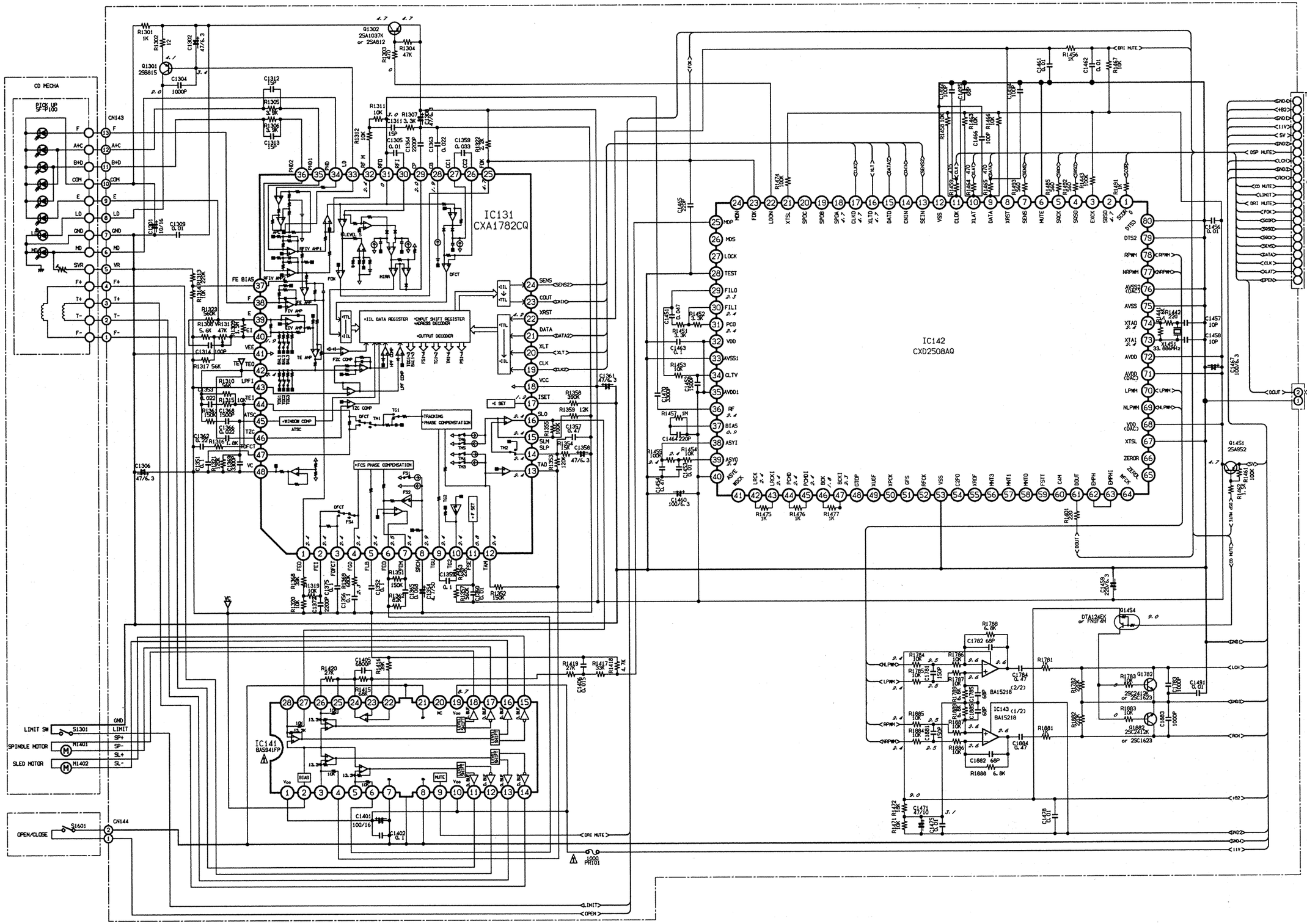
This is a basic schematic diagram.

WIRING DIAGRAM (TUNER)



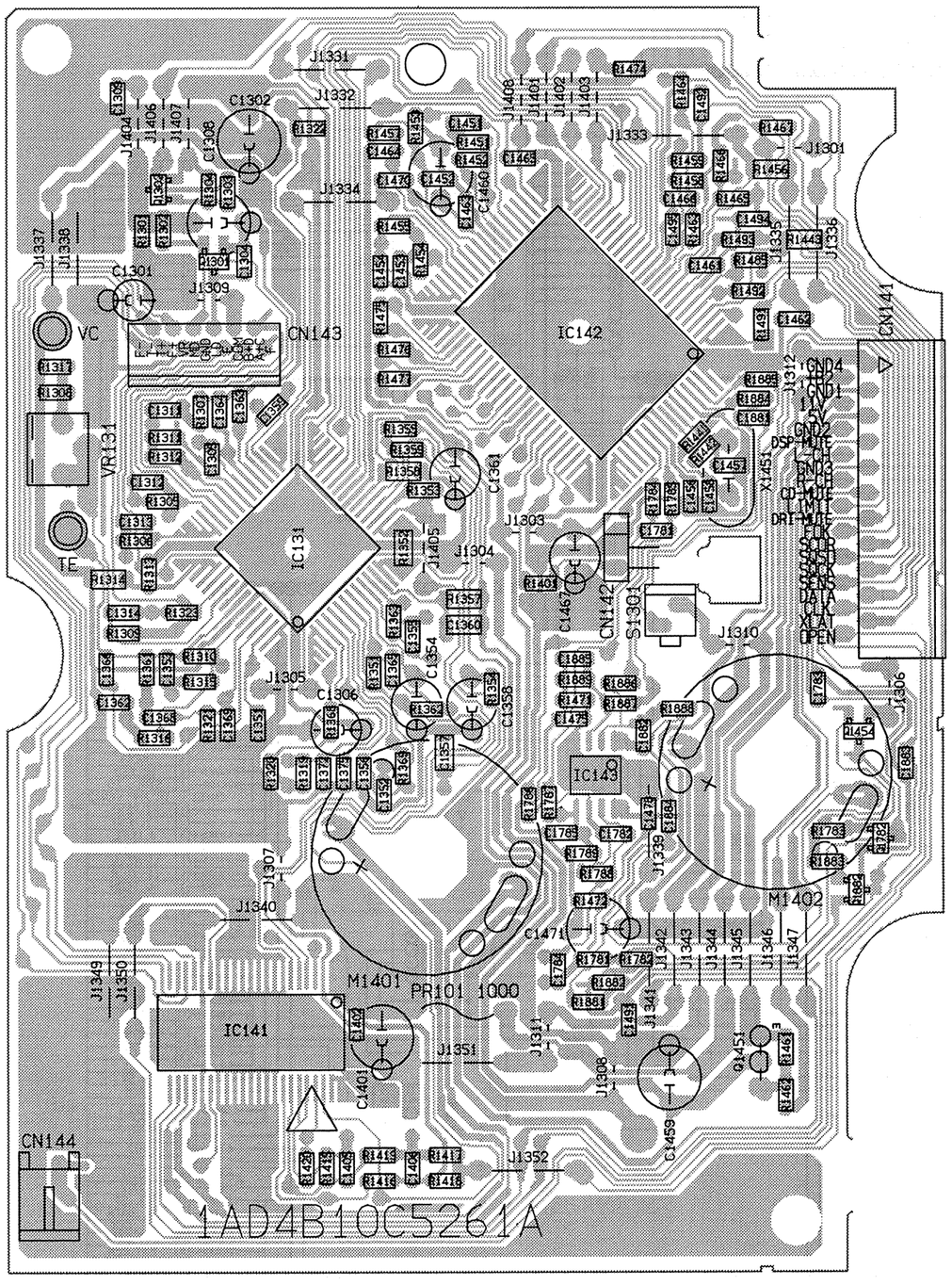
TUNER P.W.B

SCHEMATIC DIAGRAM (CD)



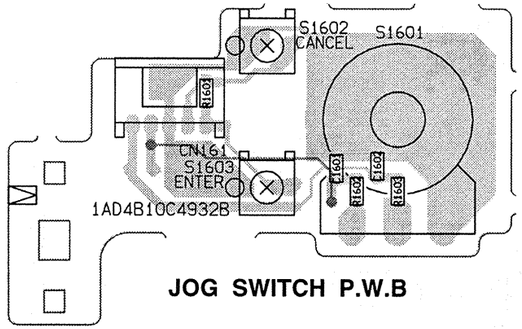
This is a basic schematic diagram.

WIRING DIAGRAM (CD)

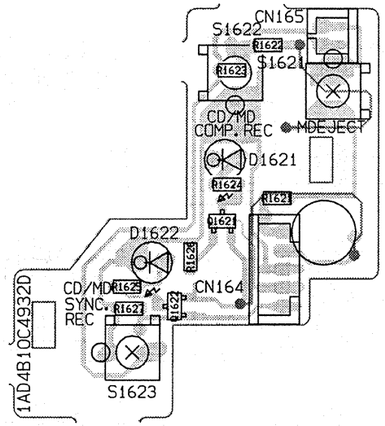


CD P.W.B

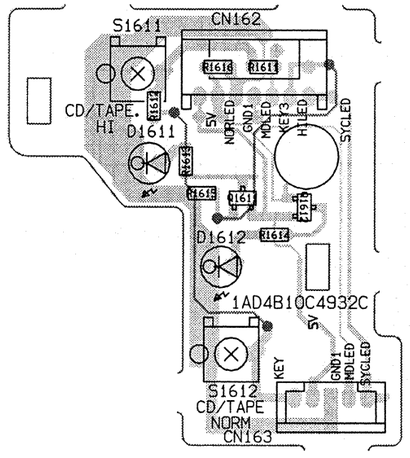
WIRING DIAGRAM (SWITCH)



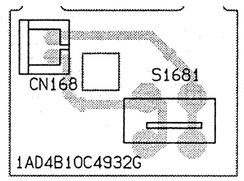
JOG SWITCH P.W.B



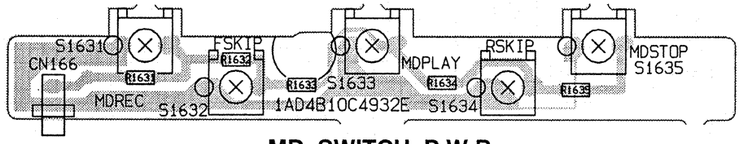
CD-MD DIGITAL REC SWITCH P.W.B



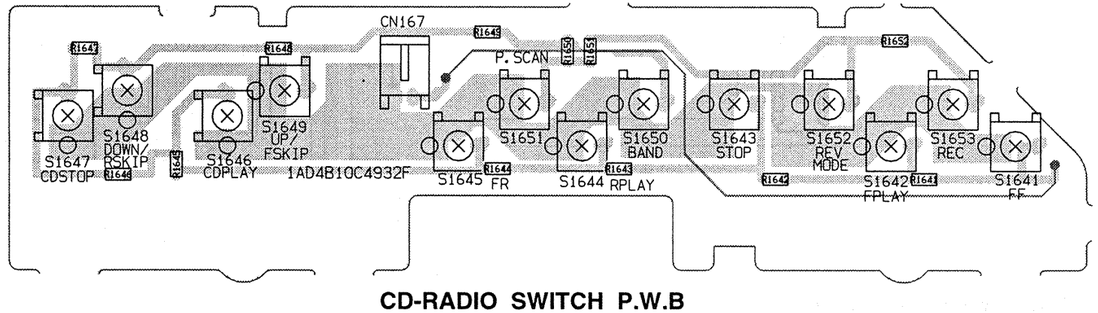
CD-TAPE ONE TOUCH REC SWITCH P.W.B



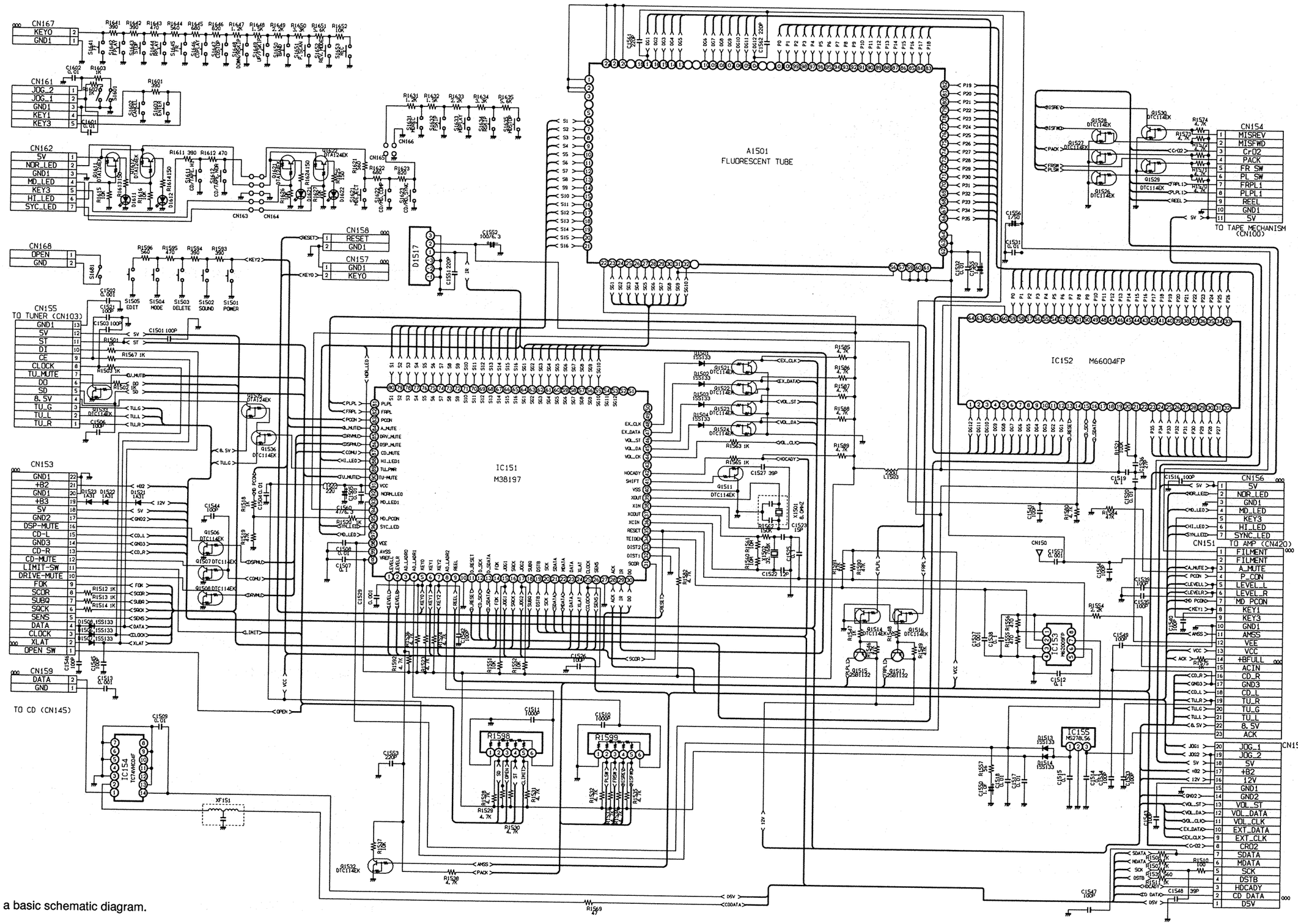
CD OPEN SWITCH P.W.B



MD SWITCH P.W.B



CD-RADIO SWITCH P.W.B



This is a basic schematic diagram.

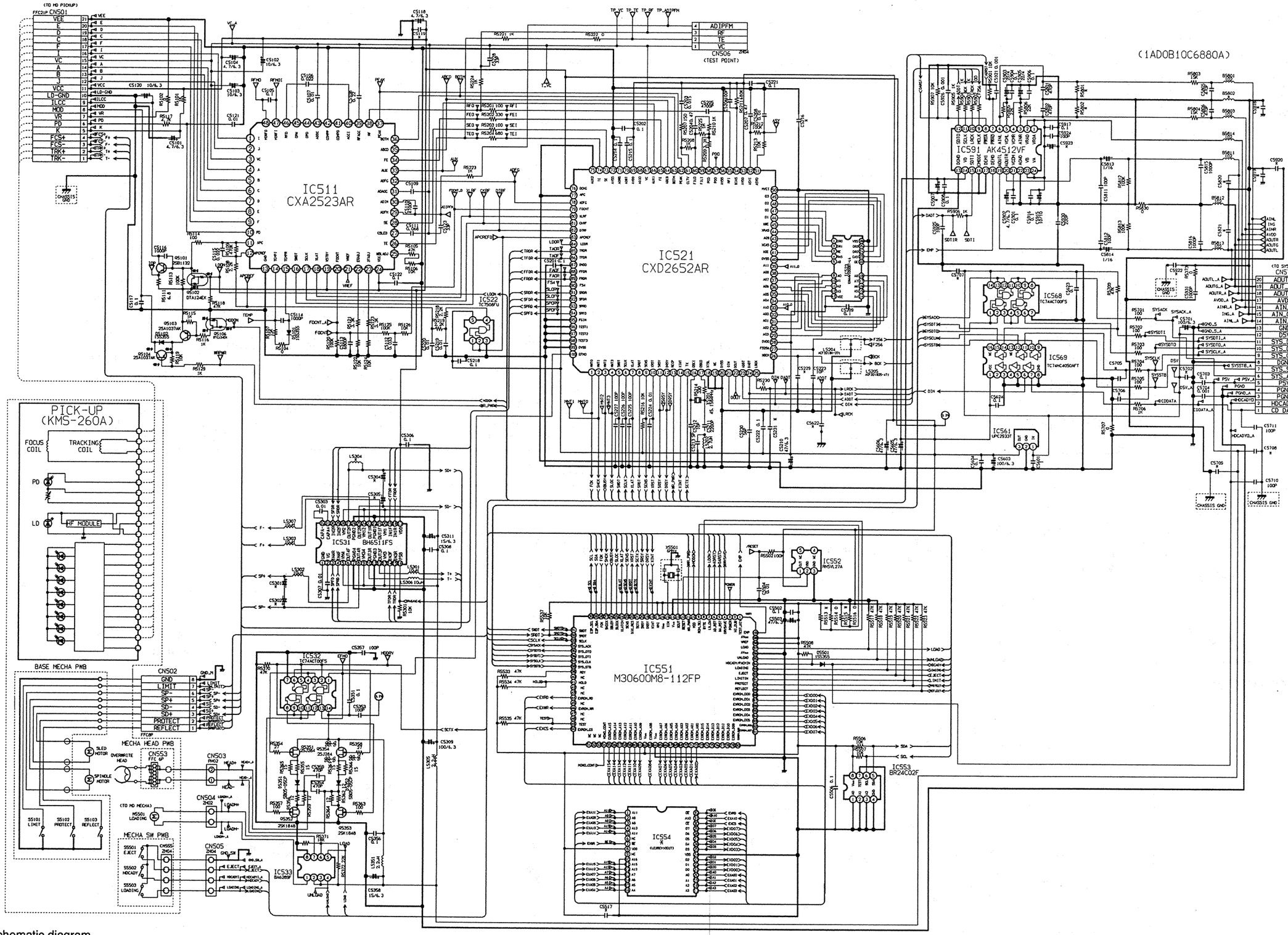
WIRING DIAGRAM (SYSCON)

< TOP VIEW >

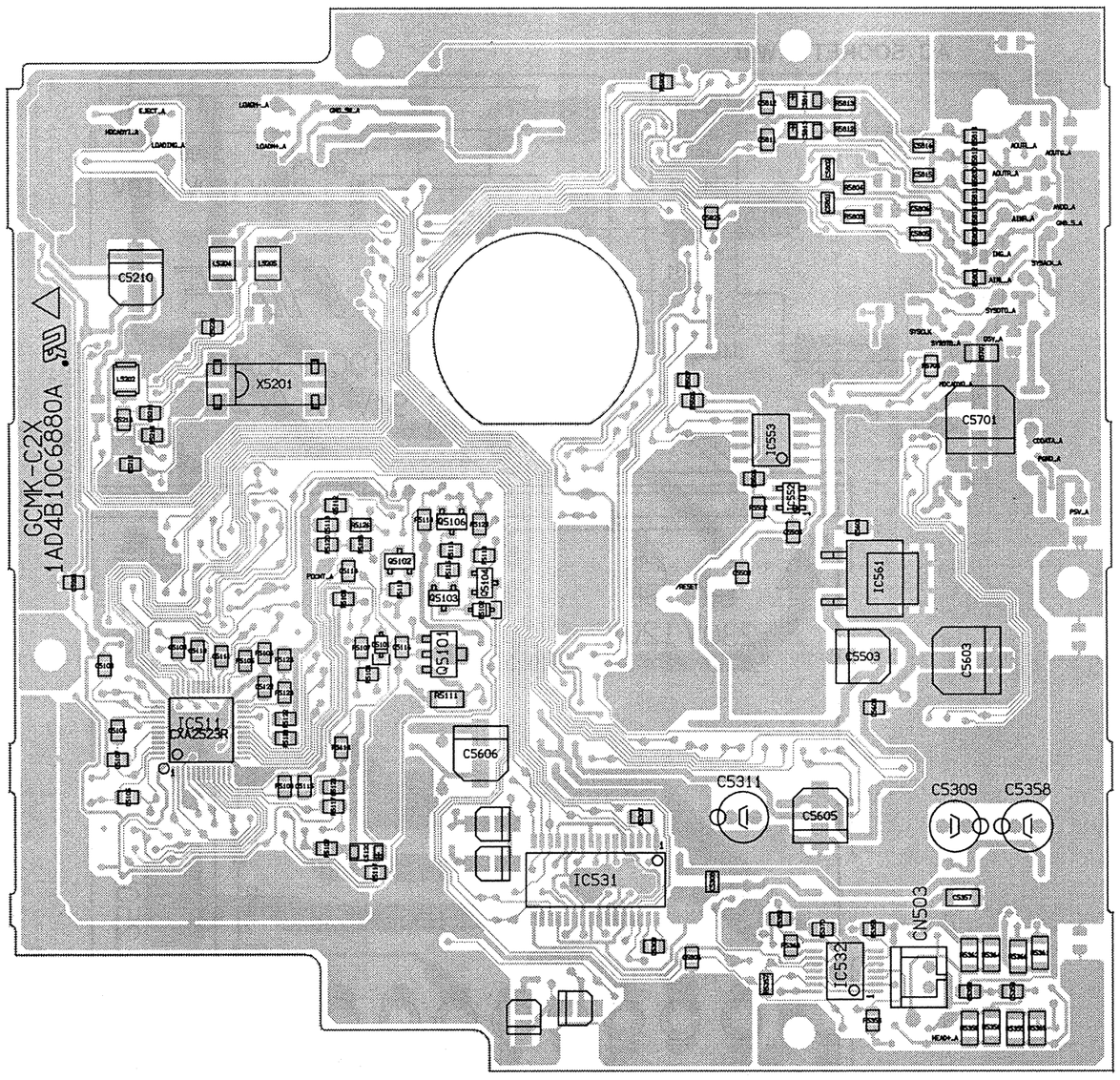
SYSTEM CONTROL P.W.B

< BOTTOM VIEW >

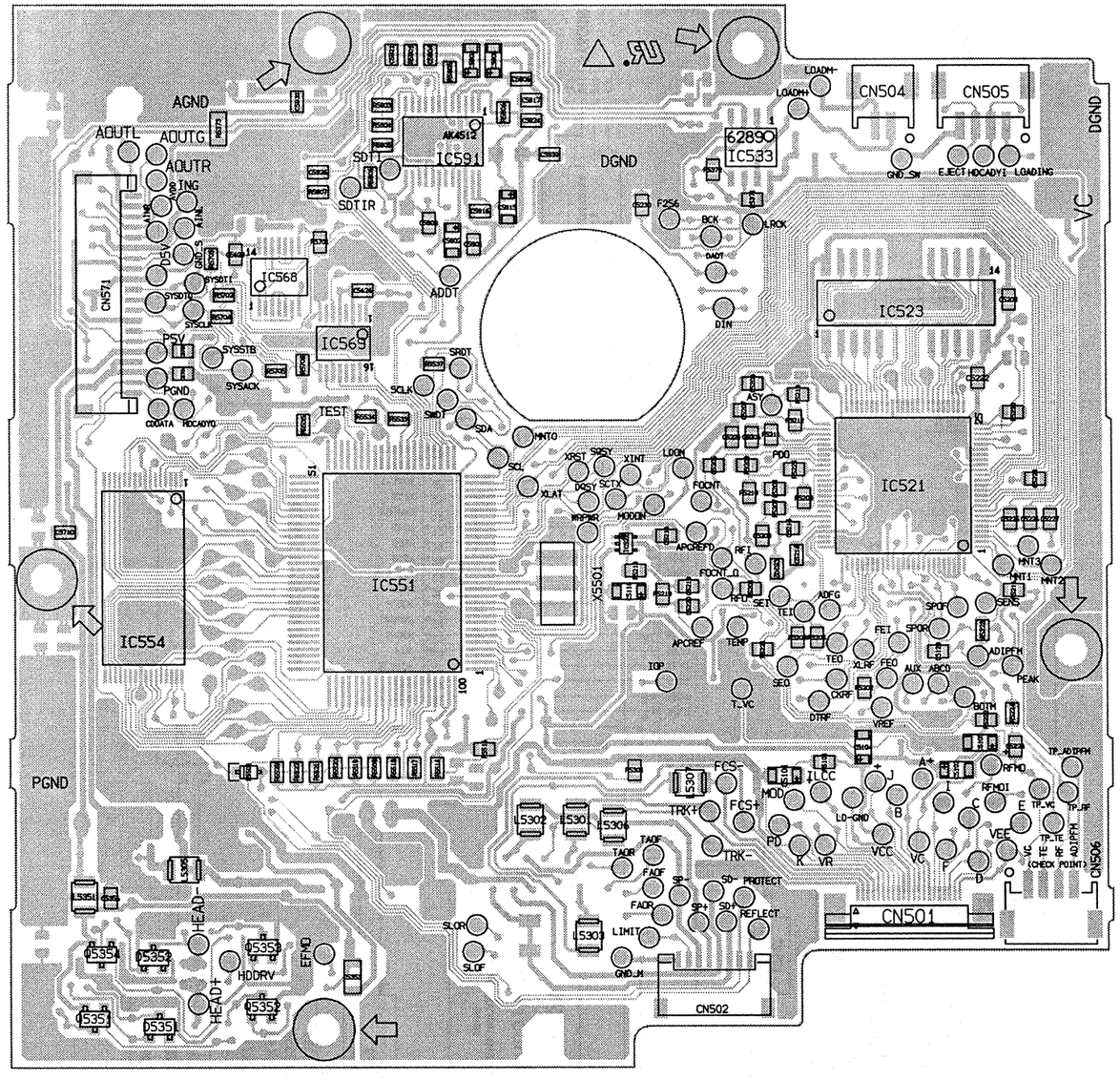
SCHEMATIC DIAGRAM (MD)



This is a basic schematic diagram.

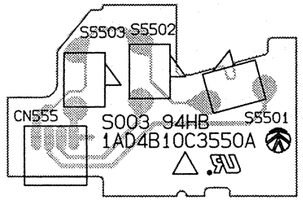


MD MAIN P.W.B

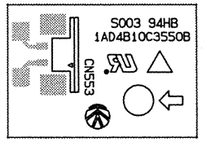


MD MAIM P.W.B

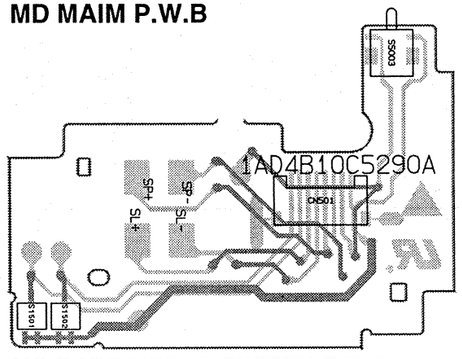
This PWB consists of 4 layers. (Omit 2 layers of the inside.)



MD LOADING MECHA SWITCH P.W.B

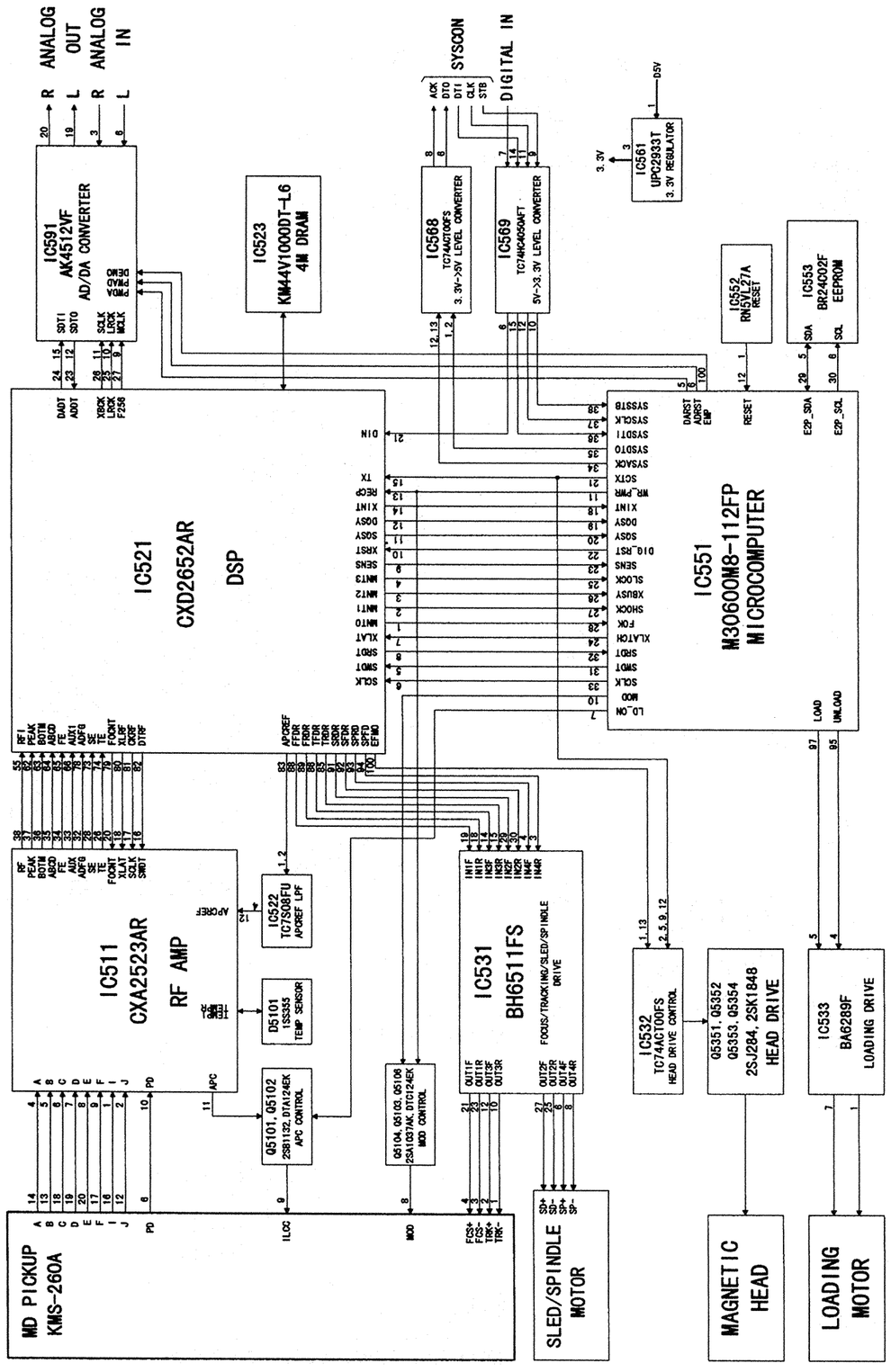


MD REC HEAD RALAY P.W.B

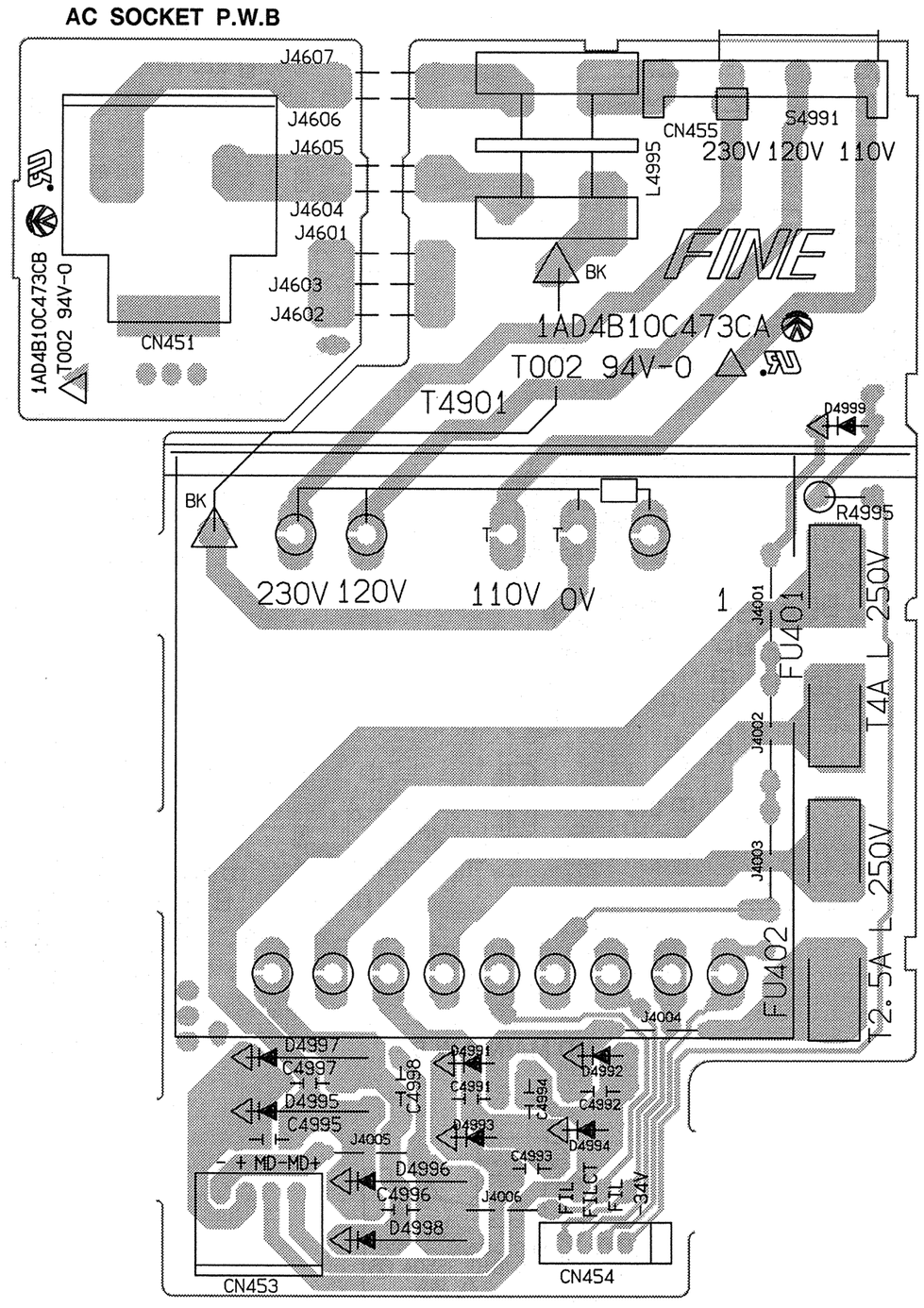


MD BASE MECHA SWITCH P.W.B

BLOCK DIAGRAM (MD)

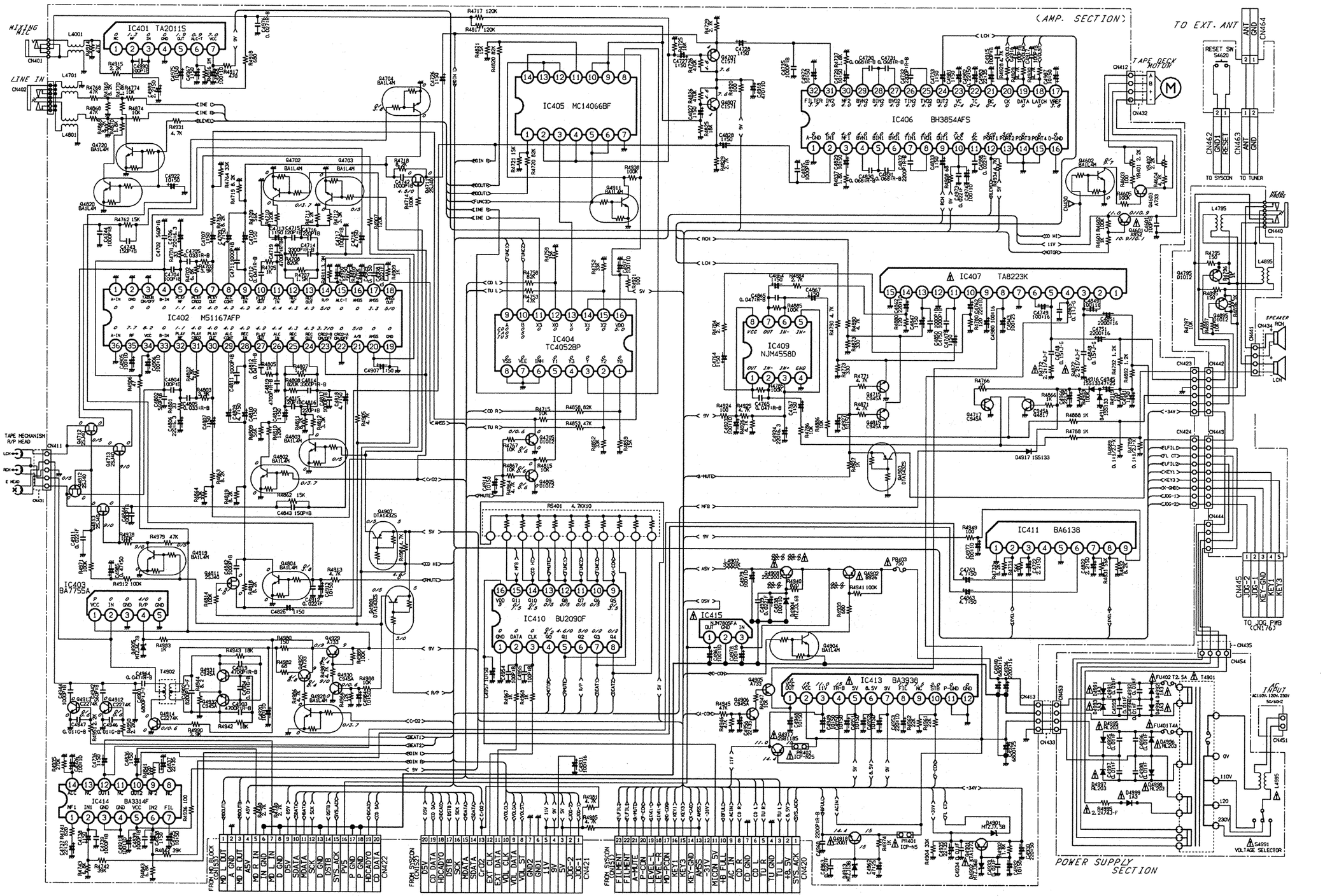


WIRING DIAGRAM (POWER)



POWER SUPPLY P.W.B

SCHEMATIC DIAGRAM (AMPLIFIER)



This is a basic schematic diagram.

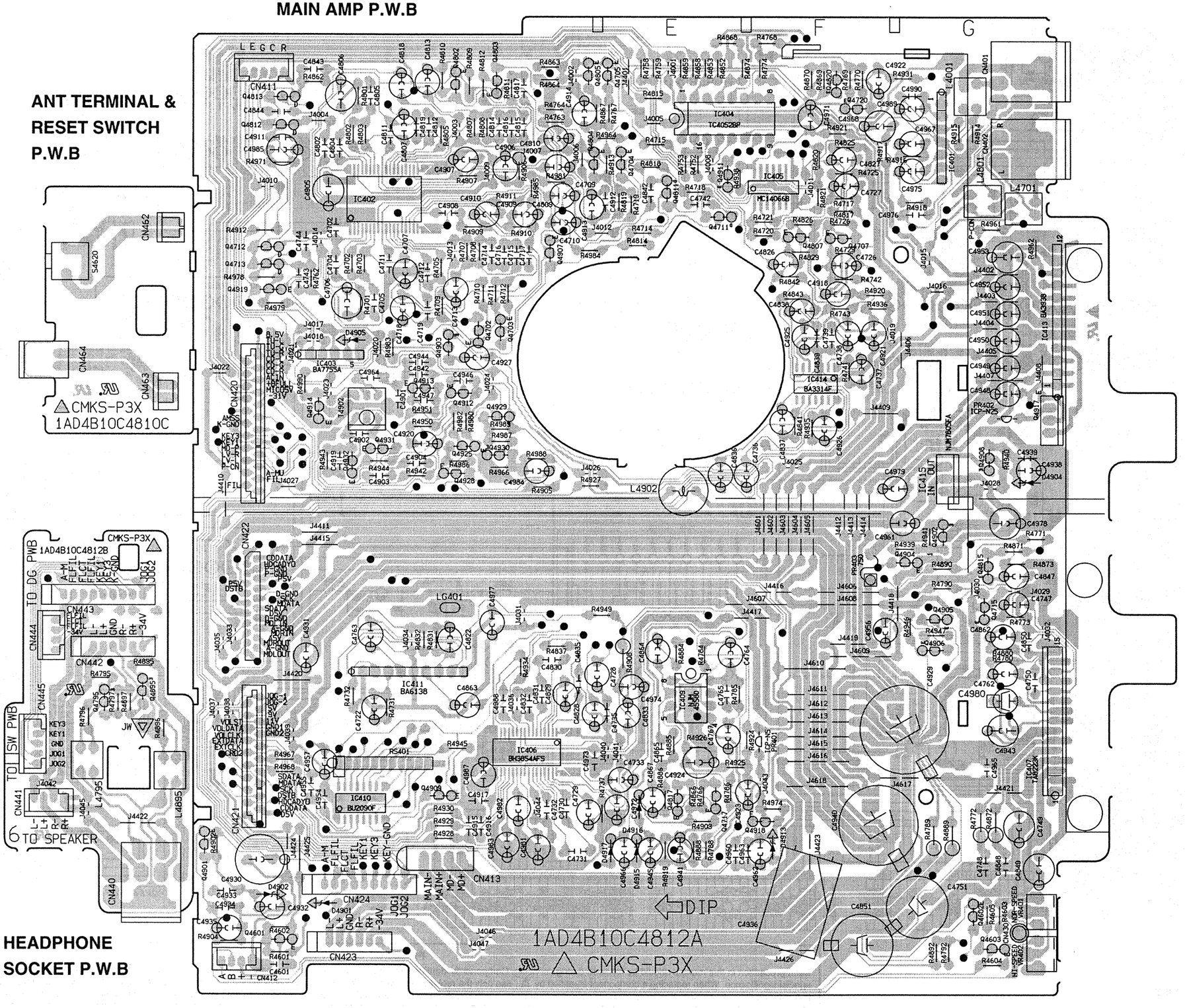
PRODUCT SAFETY NOTICE

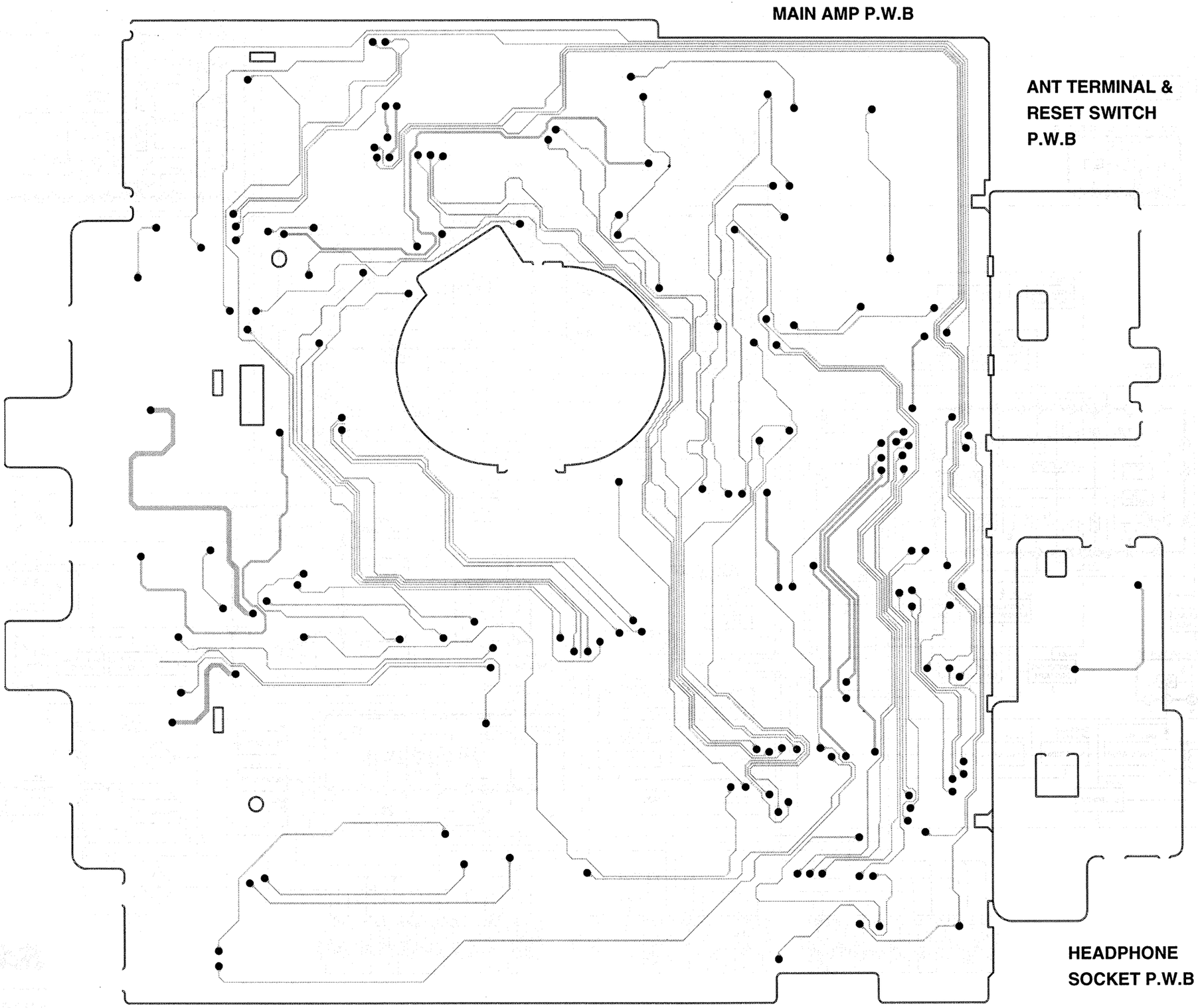
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designated components in which safety can be of special significance. When replacing a component identified by ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

MAIN AMP P.W.B

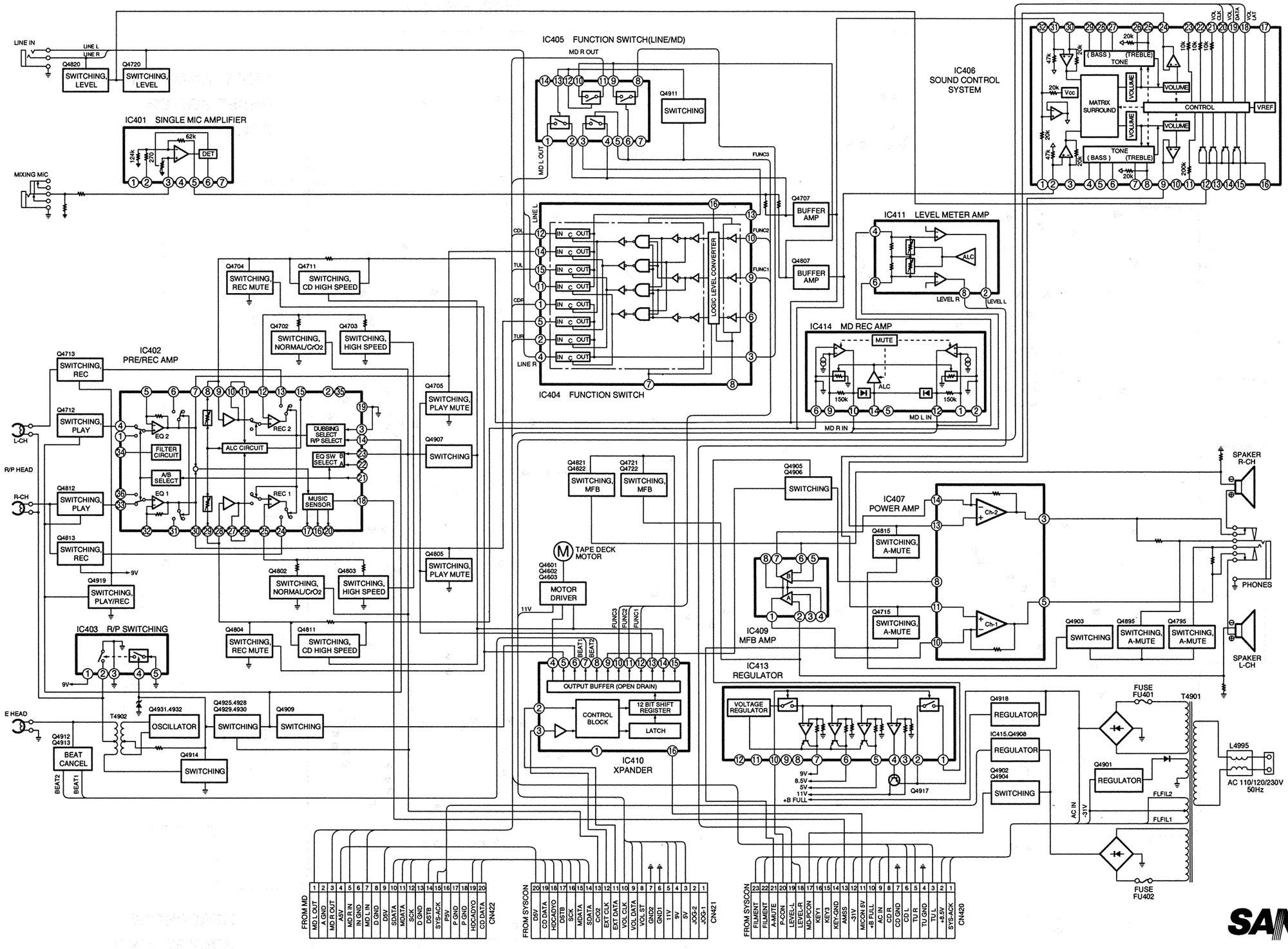
ANT TERMINAL & RESET SWITCH P.W.B

HEADPHONE SOCKET P.W.B




MAIN AMP P.W.B
ANT TERMINAL &
RESET SWITCH
P.W.B
HEADPHONE
SOCKET P.W.B

BLOCK DIAGRAM (AMPLIFIER)



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